PETRI

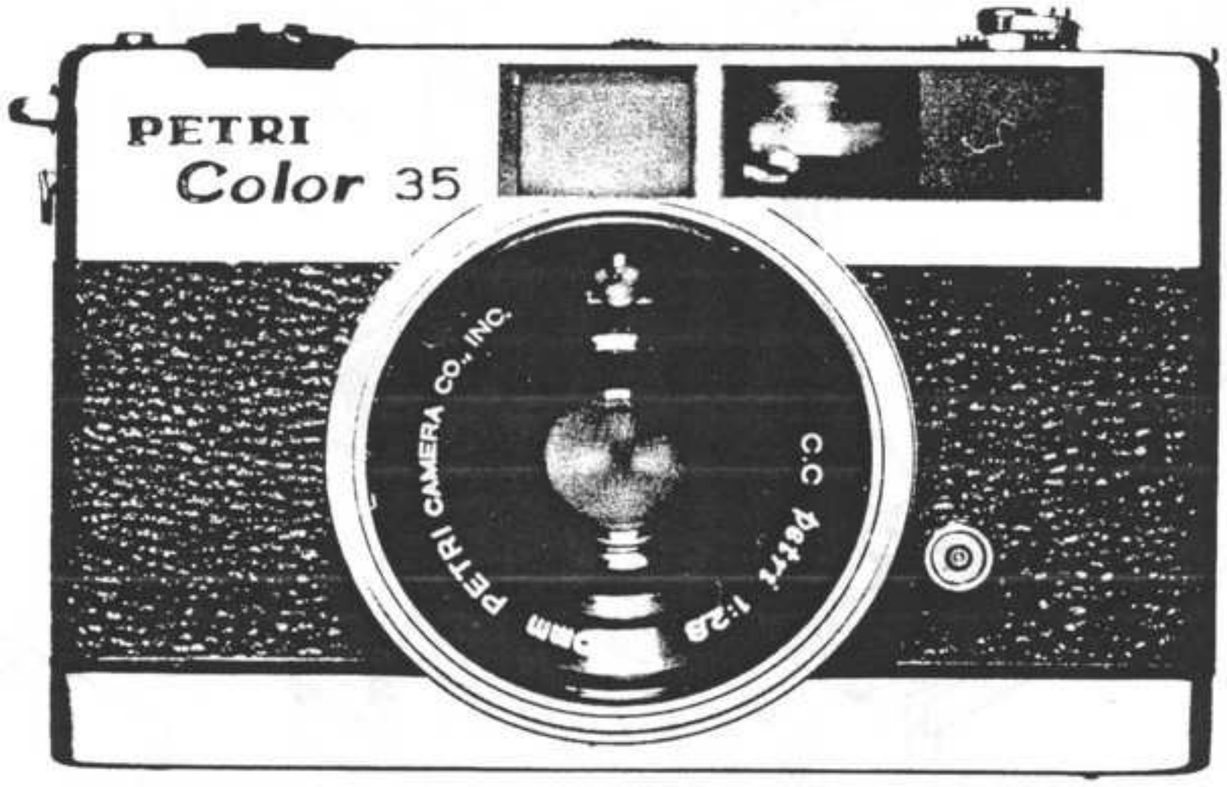
REPAIR MANUAL

PETRI *Color* 35

PETRI CAMERA COMPANY, INC.

PETRI
PARTS LIST

Color 35



Inform us of the complete CAMERA MODEL, FIGURE NUMBER, PART NUMBER, DESCRIPTION and QUANTITY of each item as illustrated in this manual.

Individual components of some assemblies are not available unless shown separately in this manual. If the part you require is not listed, please ask us about its availability.

Since PETRI products are constantly being improved, the design of some parts shown in this manual may differ from those used on earlier models.

25-12, 7-CHOME, UMEDA
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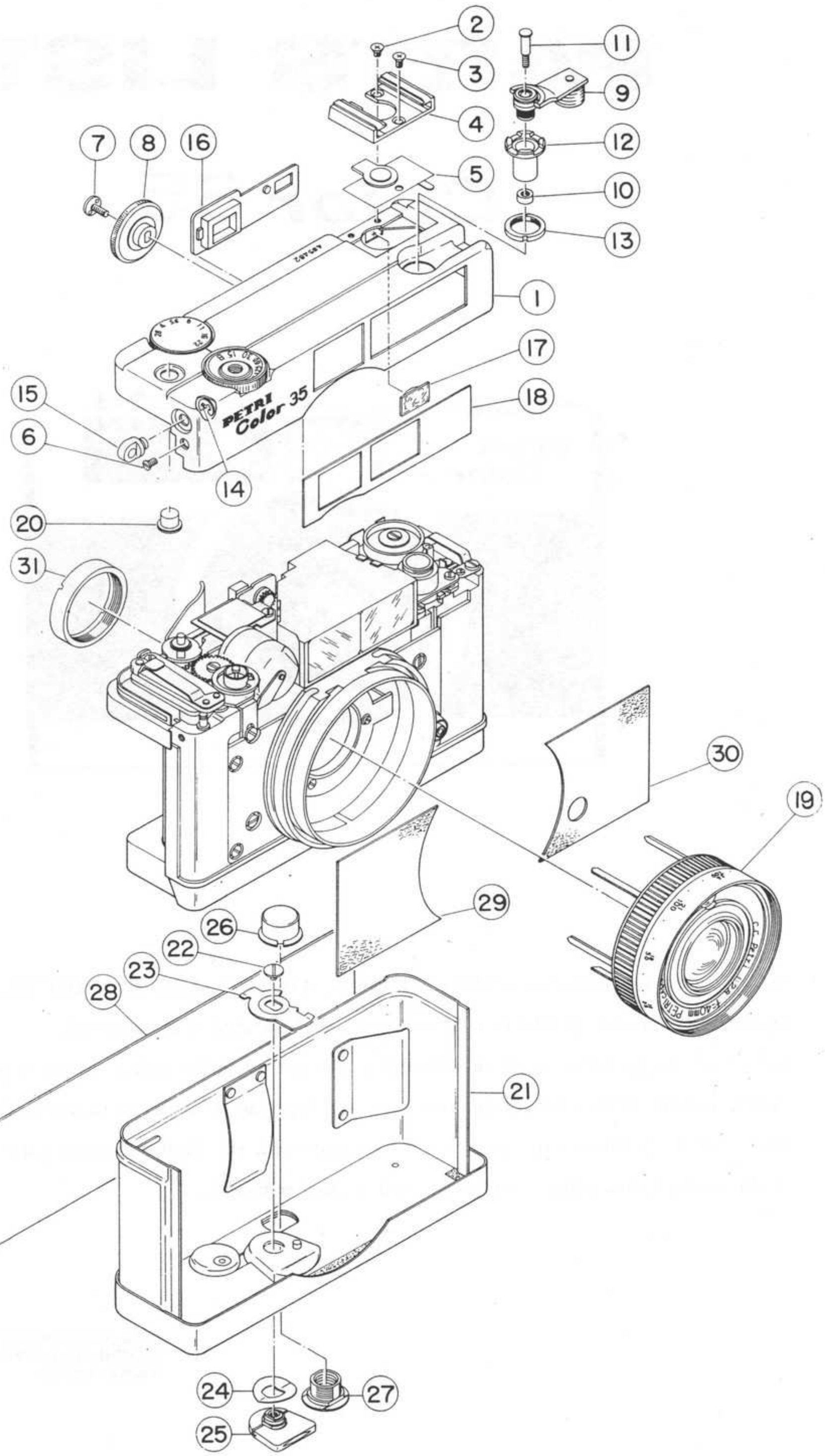
PHONE: 887-111

① PARTS LIST

Color 35

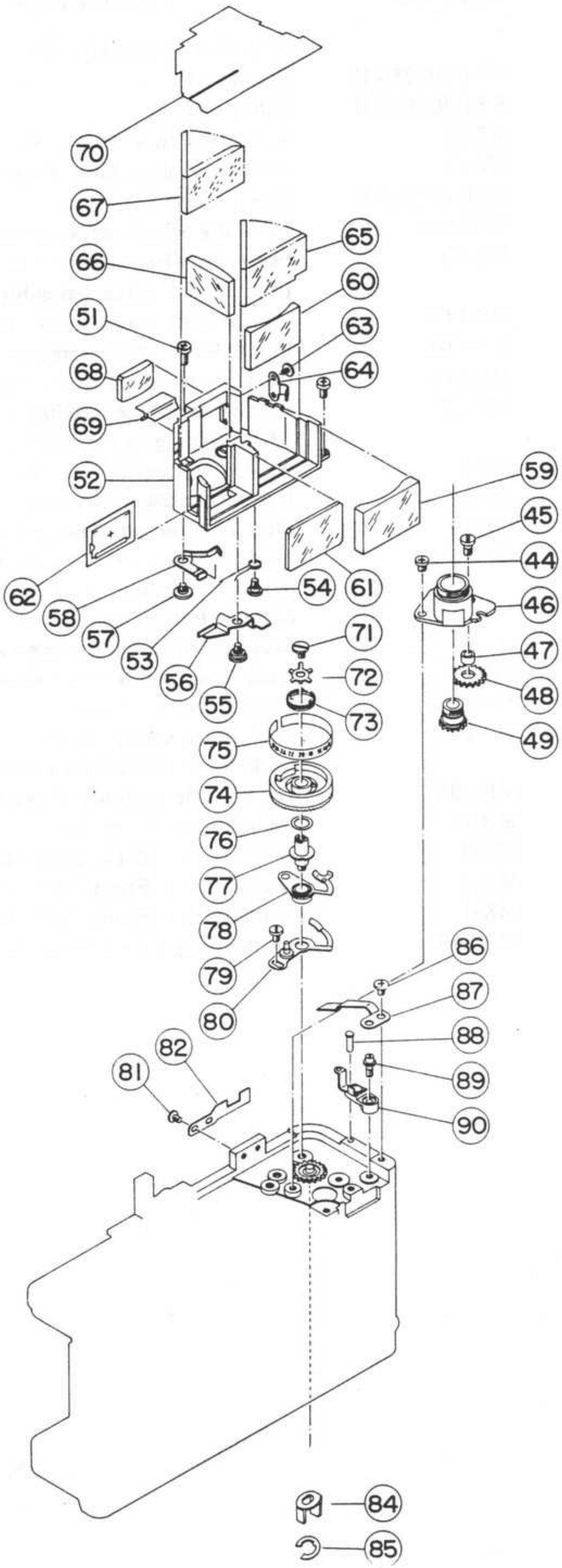


Color 35 PARTS LIST

FIG.	PART NO.	DESCRIPTION	UNIT
1		Top cover assembly (カバー一式)	1
2	S 81-202255 H	Screw - 81	2
3	S 81-202655 H	Screw - 81	1
4	MP-61	Accessory shoe (差 込 座)	1
5	MP-64	Accessory shoe base (差込座ベース)	1
6	S 91-172555 H	Screw - 91	1
7	SPVB-42	Focusing wheel screw (セルフレバー取付)	1
8	MB-50	Focusing wheel (距離ダイヤル)	1
9		Film-rewind crank assembly (リターンレバー一式)	1
10	MB-115	Film-rewind crank screw receiver (リターンレバー取付受)	1
11	MB-114	Film-rewind crank screw (リターンレバー取付)	1
12	MB-113	Film-rewind shaft (リターン芯棒)	1
13	MB-127	Film-rewind base retainer (リターンベース押え)	1
14		2.0 φ E-Ring (2.0φ Eリング)	1
15	MB-2	Wrist strap eyelet (吊 環)	1
16	MP-89	Eyepiece mask (接眼マスク)	1
17	MP-74	Film counter window (カウンター窓)	1
18	MP-21	Finder mask (ファインダーマスク)	1
19		Shutter assembly (レンズ シャッター一式)	1
20		Battery tester button (チェッカーボタン一式)	1
21		Back cover assembly (裏蓋一式)	1
22	MB-31	Lock lever screw (ロックレバー取付)	1
23	MP-22	Lock lever (ロックレバー)	1
24	MP-24	Lock lever spring (ロックバネ)	1
25		Lock lever assembly (ロックレバー一式)	1
26	MB-136	Tripod hole fastener (三脚止キャップ)	1
27	MB-87	Tripod hole (三 脚 止)	1
28	MK-3	Leatherette - Back cover (裏蓋凝革)	1
29	MK-2	Leatherette - Front "A" (前面凝革 "A")	1
30	MK-1	Leatherette - Front "B" (前面凝革 "B")	1
31	MSB-49	Shutter ring (シャッターリング)	1

② PARTS LIST

Color 35



PARTS LIST

FIG.	PART NO.	DESCRIPTION	UNIT
44	S 71-202853 H	Screw - 71	2
45	MB-118	Film-rewind base screw (リターンベース止)	1
46	MB-117	Film-rewind base (リターンベース)	1
47	MB-119	Film-rewind gear B shaft (リターンギャーB芯棒)	1
48	MP-81	Film-rewind gear B (リターンギャーB)	1
49	MP-77	Film-rewind gear C (リターンギャーC)	1
51	S 71-204052 H	Screw - 71	3
52		View-finder base (地　板)	1
53	MW-12	Focusing needle lever spring (指針レバーSP)	1
54	SPB-88	Mirror stopper A screw (ミラー止A取付)	1
55	MB-124	Cam follower screw (連動桿軸芯)	1
56	MP-84	Cam follower (連　動　桿)	1
57	MB-122	Focusing needle lever screw (目盛レバー軸芯)	1
58	MP-82	Focusing needle lever (目盛レバー)	1
59	4082	View-finder glass A (対物レンズA)	1
60	4083	View-finder glass B (対物レンズB)	1
61	4088	Diffusion glass (散光ガラス)	1
62	MP-87	Bright frame mask (チャート枠)	1
63	S 73-141852 H	Screw - 73	2
64	MP-88	Half mirror hold (半透明鏡クリック)	1
65	4086	Half mirror (半透明鏡)	1
66	4085	Large negative lens (中間レンズ)	1
67	4087	Reflex mirror (チャート表面鏡)	1
68	4084	Eye-piece lens (接眼レンズ)	1
69	MP-75	Light sealing plate (地板遮光板)	1
70	MP-83	Light sealing paper (地板遮光紙)	1
71	MB−140	Counter base screw (カウンターベース取付)	1
72	MP-66	Counter stopper plate (カウンター止め板)	1
73	MW-10	Frame counter spring (カウンタースプリング)	1
74	MP-70	Counter base (カウンターベース)	1
75	MP-69	Counter scale (カウンターネーム)	1
76		0501-05	1
77	MB-105	Frame counter shaft (カウンター軸芯)	1
78	MP-68	Frame advance pawl (送　り　爪)	1
79	S 73-202053 H	Screw - 73	1
80	MP-67	Stopper pawl (止　め　爪)	1
81	S 71-141852 H	Screw - 71	2
82	MP-72	Frame number indicator (カウンター指標)	1
84	MP-123	Film-rewind pawl (リターン爪)	1
85		2.0 φ E-Ring (2.0φ Eーリング)	1
86	S 73-172853 H	Screw - 73	1
87	MP-71	Counter reset lever (カウンター解除レバー)	1
88	MB-106	Counter reset pin (カウンター解除ピン)	1
89	MB-109	Connector base screw (接片ベース取付)	1
90	MP-65	Hot shoe connector base (差込座接片受ベース)	1

PARTS LIST

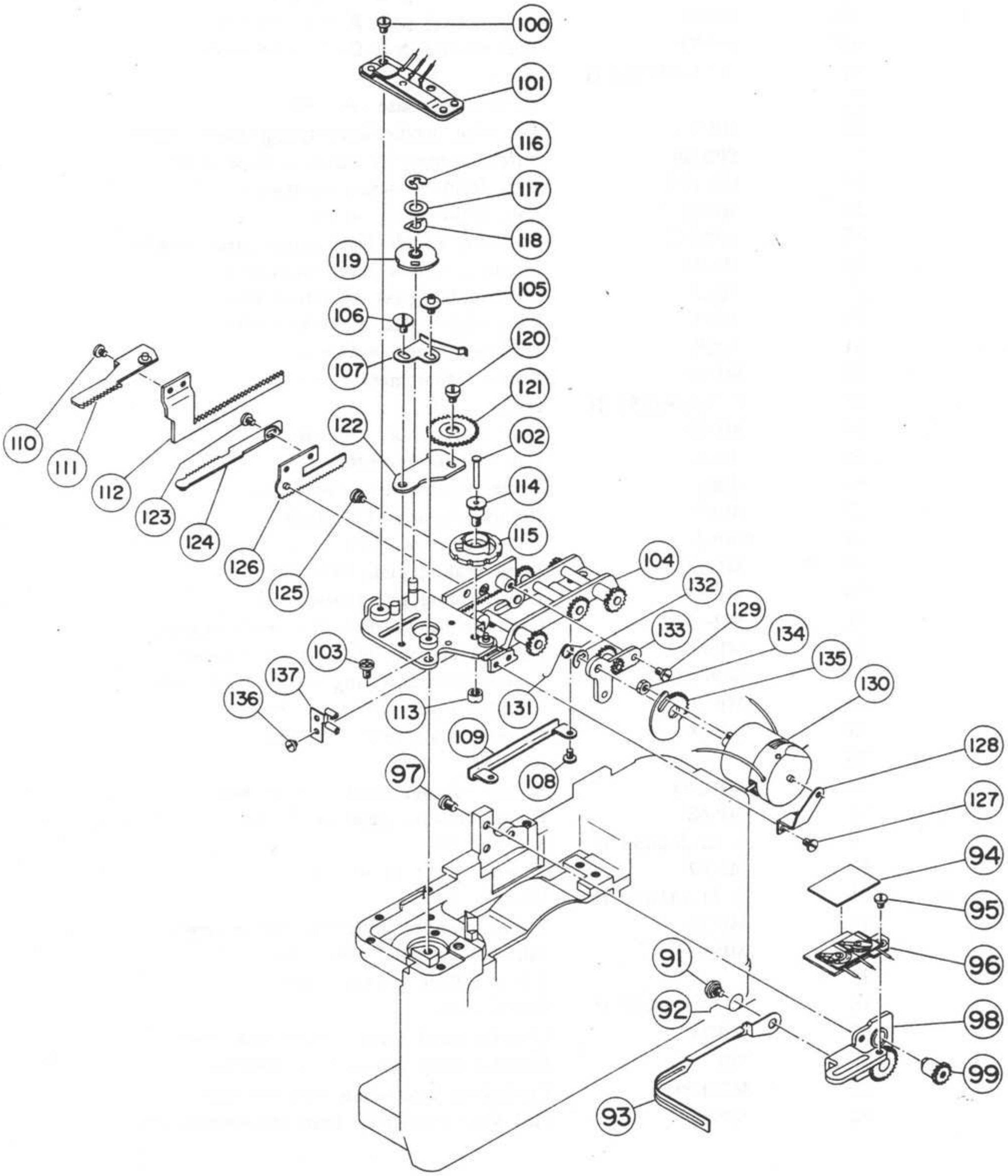

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FIG.	PART NO.	DESCRIPTION	UNIT
91	MB-57	Slot cover screw (捲取レバーカバー取付)	1
92	MW-22	Slot cover spring (遮光板ＳＰ)	1
93	MP-37	Slot cover (捲取レバーカバー)	1
94		Vinyl tape (ビニールテープ)	1
95	S 73-142253 H	Screw - 73	1
96		Meter resistance assembly (メーター抵抗ベース一式)	1
97	S 71-202853 H	Screw - 73	3
98		Focusing wheel base (距離ダイヤル取付板一式)	1
99	MB-48	Focusing wheel gear (距離ダイヤルギャーＡ)	1
100	S 71-172553 H	Screw - 71	1
101		Tester connector base (チェッカー接片ベース)	1
102	MB-46	Shutter release pin (レリーズピン)	1
103	S 71-202853 H	Screw - 71	3
104		Gear plate (ギャー地板)	1
105	MB-146	S. D. Click screw (ＳＤクリック取付)	1
106	MB-131	Tester base screw (チェッカーベース取付)	1
107	MP-111	S. D. Click spring (ＳＤクリックバネ)	1
108	S 71-142253	Screw - 71	2
109	MP-55	Speed rack guide (スピードラックガイド)	1
110	MB-13	Diaphragm rack "A" screw (絞りラックＡ取付)	2
111	MP-35	Speed rack "A" (速度ラックＡ)	1
112	MP-36	Speed rack B (速度ラックＢ)	1
113	MB-34	S. D. Click plate nut (ＳＤクリック板取付ナット)	1
114	MB-30	S. D. Click plate screw (ＳＤクリック板取付)	1
115	MP-25	Speed dial click plate (スピードダイヤルクリック板)	1
116		1.5φE - Ring (1.5φ Ｅリング)	1
117	MP-113	Diaphragm dial FW A (絞りダイヤルＦＷ Ａ)	1
118	MP-114	Diaphragm dial FW B (絞りダイヤルＦＷ Ｂ)	1
119	MP-20	Diaphragm dial stopper (絞りダイヤルストッパー)	1
120	MB-20	Speed dial gear B screw (スピードダイヤルギャーＢ取付)	1
121	MP-56	Speed dial gear B (スピードダイヤルギャーＢ)	1
122	MP-50	Speed gear base (ギャー地板上)	1
123	MB-13	Diaphragm rack A screw (絞りラックＡ取付)	2
124	MP-17	Diaphragm rack A (絞りラックＡ)	1
125	MB-24	Diaphragm rack B screw (絞りラックＢ取付)	1
126	MP-18	Diaphragm rack B (絞りラックＢ)	1
127	S 73-141852 H	Screw - 73	2
128	MP-108	Meter shaft hold (メーター軸受板)	1
129	S 81-142053 H	Screw - 81	2
130		Exposure meter (メーター一式)	1
131	MW-18	Meter spring (メーターＳＰ)	1
132		1.5 φ E-Ring (1.5φ Ｅリング)	1
133		Meter setting plate (メーター取付板一式)	1
134	MB-37	Meter gear "A" nut (メーターギャーＡナット)	1
135	MP-44	Meter gear "A" (メーターギャーＡ)	1
136	VEB-8	Moving brush screw (移動接片取付)	2
137	MP-51	Meter needle stopper (指針ストッパー)	1

④ PARTS LIST

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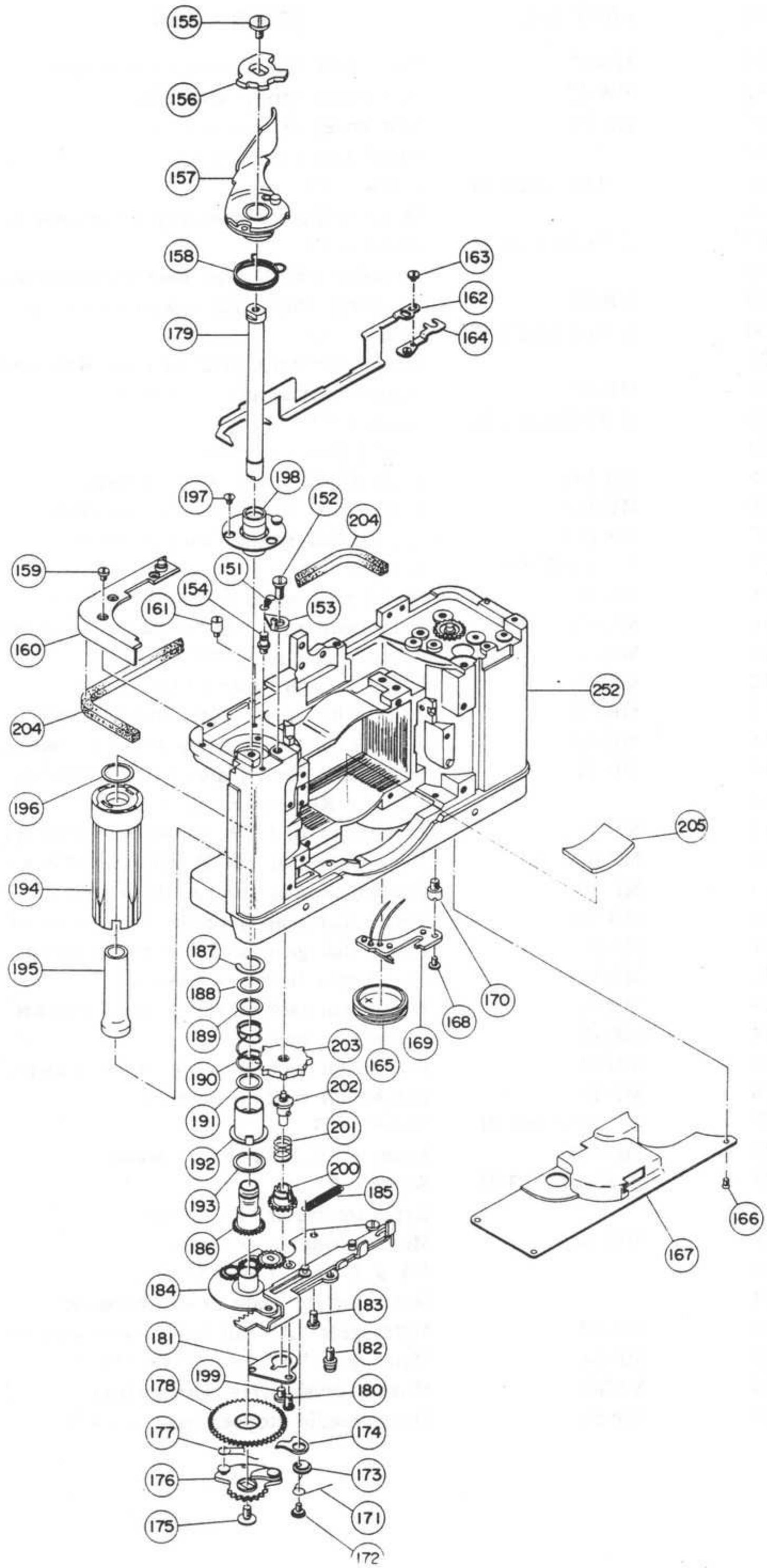

PARTS LIST

FIG.	PART NO.	DESCRIPTION	UNIT
151	MW-5	Stop pawl spring (首振り爪ＳＰ)	1
152	MB-82	Stop pawl screw (首振り爪取付)	1
153	MP-53	Double stop pawl (首振り爪)	1
154	MB-83	Stop pawl spring hook (首振り爪ＳＰ掛)	1
155	MB-137	Wind lever screw (捲上板取付)	1
156	MP-38	Double wind stop plate (捲　上　板)	1
157		Wind lever (捲取レバー一式)	1
158	MW-6	Wind lever spring (捲取レバーＳＰ)	1
159	S 71-172552 H	Screw - 71	3
160	MP-40	Wind lever base (捲取レバー下)	1
161	MB-128	Drive arm pin (作動桿位置決ノック)	1
162	MP-54	Counter drive arm "A" (カウンター作動桿Ａ)	1
163	MB-123	Drive arm connect screw (目盛レバーノック止め)	1
164		Counter drive arm "B" (カウンター作動桿Ｂ一式)	1
165	MB-6	Battery compartment cover (電池キャップ)	1
166	S 81-142053 H	Screw - 81	3
167	MP-4	Bottom plate B (底　板　Ｂ)	1
168	S 73-142253	Screw - 73	1
169		Battery contact base (スイッチ接片ベース)	1
170	MB-4	Battery contact base nut (スイッチ接片ベースナット)	1
171	MW-9	Ratchet pawl spring (逆転止ＳＰ)	1
172	MB-96	Ratchet pawl screw (逆転止取付)	1
173	SP2B-46	Eccentric ratchet washer (逆転止エキセン)	1
174	MP-60	Ratchet pawl (逆転止爪)	1
175	MB-88	Winding gear screw (ギャー板取付)	1
176		Shutter set gear plate (チャージギャー板)	1
177	MW-19	Winding pawl spring (捲取爪スプリング)	1
178	MP-42	Winding gear (捲上ギャー)	1
179	MB-64	Wind lever shaft (捲取芯棒)	1
180	S 71-172852 H	Screw - 71	2
181	MP-9	Sprocket gear base (スプロケットギャー板)	1
182	MB-95	Ratchet pawl spring pin (逆転止ＳＰ掛)	1
183	S 71-202853 H	Screw - 71	2
184		Winding gear plate (チャージ桿取付板)	1
185	MW-4	Shutter set gear spring (チャージ桿スプリング)	1
186	MB-76	Take-up spool gear (リールギャー)	1
187	MP-100	Spool gear snap ring (リールギャースナップリング)	1
188	MP-41	Spool gear washer (リールギャー座金)	1
189	MP-52	Spool gear fiber (リールギャーファイバー)	1
190	MW-17	Spool gear snap spring (リールギャースナップリング)	1
191	MP-52	Spool gear fiber (スプールギャーファイバー)	1
192	MP-23	Take-up spool pawl (リール筒爪)	1
193	MP-58	Take-up spool gear fiber "B" (リールギャーファイバーＢ)	1
194	MP-105	Take-up spool (リール筒)	1
195	MB-7	Inner take-up spool (内リール筒)	1
196	MP-106	Take-up spool washer (リール筒ワッシャー)	1
197	S 31-171840	Screw - 31	3
198	MB-61	Take-up spool shaft (リール筒軸)	1
199	MB-92	Sprocket gear screw (スプロケットギャー取付)	1
200	MB-67	Sprocket gear (スプロケットギャー)	1
201	MW-16	Sprocket gear spring (スプロケットギャーＳＰ)	1
202	MB-69	Sprocket axle (スプロケット芯棒)	1
203	MB-66	Sprocket (スプロケット)	1
204	SP2TP-36	Light sealing matter (ボデー遮光体)	1
205	MP-122	Reflection-proof cloth (反射防止布)	1

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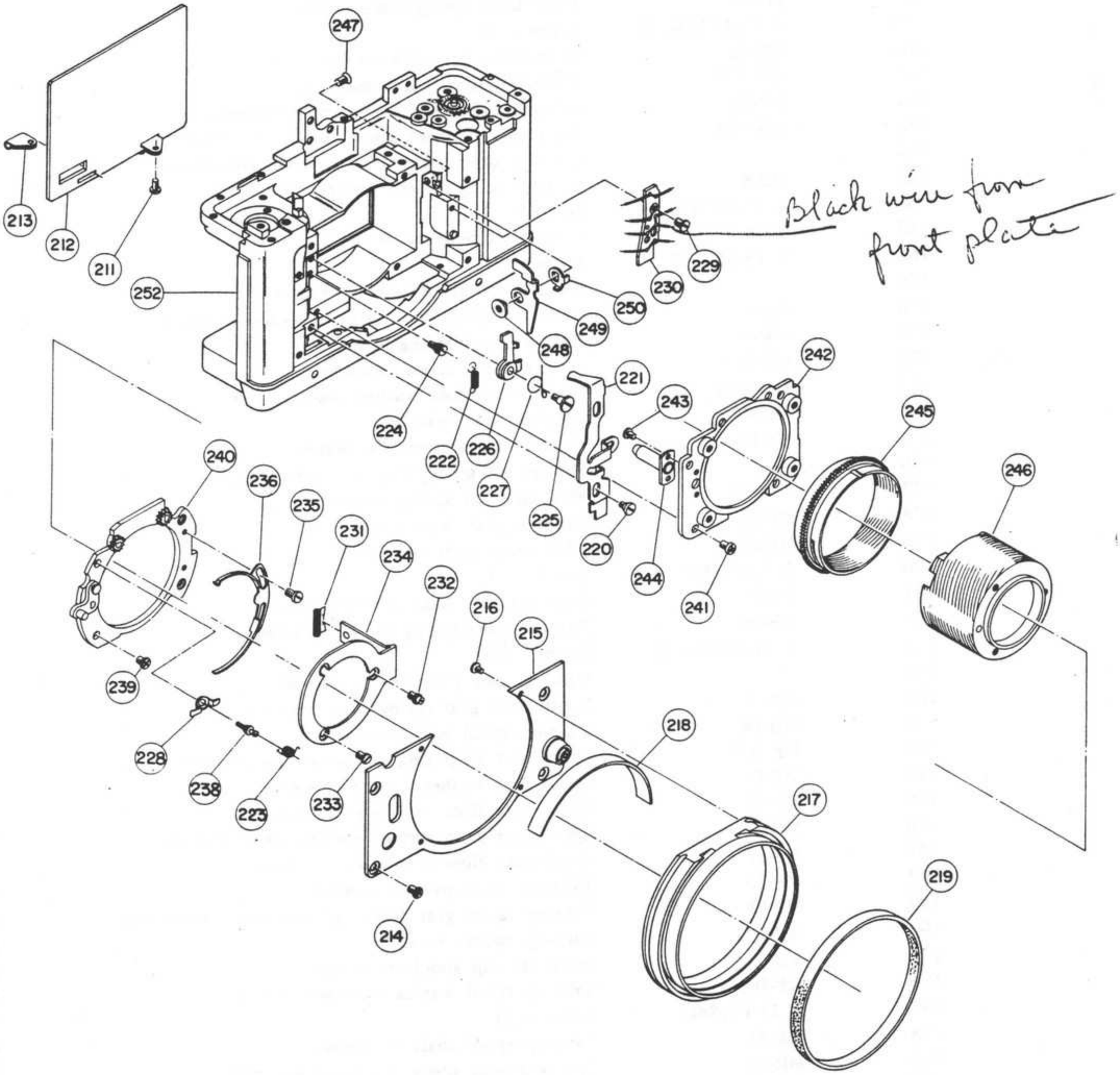

PARTS LIST

FIG.	PART NO.	DESCRIPTION	UNIT
211	S 71-172852 H	Screw - 71	2
212	MP-6	Pressure plate (圧　板)	1
213	MP-97, 98	Hinge "A" "B" (蝶番AB)	1 Each
214	S 71-202853 H	Screw - 71	4
215		Shutter plate (前　板)	1
216	S 71-141852 H	Screw - 71	4
217	MB-1	Shutter plate ring (前板リング)	1
218	MP-110	Shutter plate light sealing cover (前板遮光板)	1
219	MP-119	Dust-proof material (防塵パッキン)	1
220	MB-47	Shutter release plate screw (レリーズ板取付)	2
221	MP-31	Shutter release plate (レリーズ板)	1
222	MW-1	Shutter release plate spring (レリーズSP)	1
223	MW-15	Release plate stopper spring "B" (レリーズ板ストッパーSP B)	1
224	MB-44	Release plate spring pin (レリーズ板SP掛)	1
225	MB-43	Release plate stopper screw (レリーズ板ストッパー取付)	1
226	MP-32	Release plate stopper "A" (レリーズ板ストッパーA)	1
227	MW-2	Release plate stopper spring "A" (レリーズ板ストッパーSP A)	1
228	MP-99	Release plate stopper "B" (レリーズ板ストッパーB)	1
229	SPB-146	Synchro-terminal base screw (プレート取付)	1
230		Synchro-terminal base (ターミナル ベース)	1
231	MW-23	Lead pressure spring (リード線押えSP)	1
232	MB-94	Shutter release pin (シャッター位置決ノック)	1
233	MB-56	Focusing plate screw (直進板取付)	2
234	MP-43	Focusing plate (直　進　板)	1
235	S 13-172853	Screw - 13	2
236	MP-28	Distance scale stopper (距離ストッパー)	1
238	MB−101	Release plate stopper "B" screw (レリーズ板ストッパーB取付)	1
239	S 71-202853 H	Screw - 71	3
240		Shutter plate "B" (シャッター台B一式)	1
241	S 71-202853 H	Screw - 71	4
242	MP-5	Shutter plate "A" (シャッター台A)	1
243	S 73-142253 H	Screw - 73	2
244	MB-45	Shutter release axle (レリーズ芯棒軸)	1
245	MB-10	Helicoid outer ring (ヘリコイド外筒)	1
246	MB-9	Helicoid inner ring (ヘリコイド内筒)	1
247	S 91-173053	Screw - 91	1
248	MB-126	Focusing bar axle (距離桿軸芯)	1
249	MP-85	Focusing bar (距　離　桿)	1
250	MP-86	Focusing bar axle base (距離桿軸芯受)	1
252		Body (ボディ)	1

⑥ PARTS LIST

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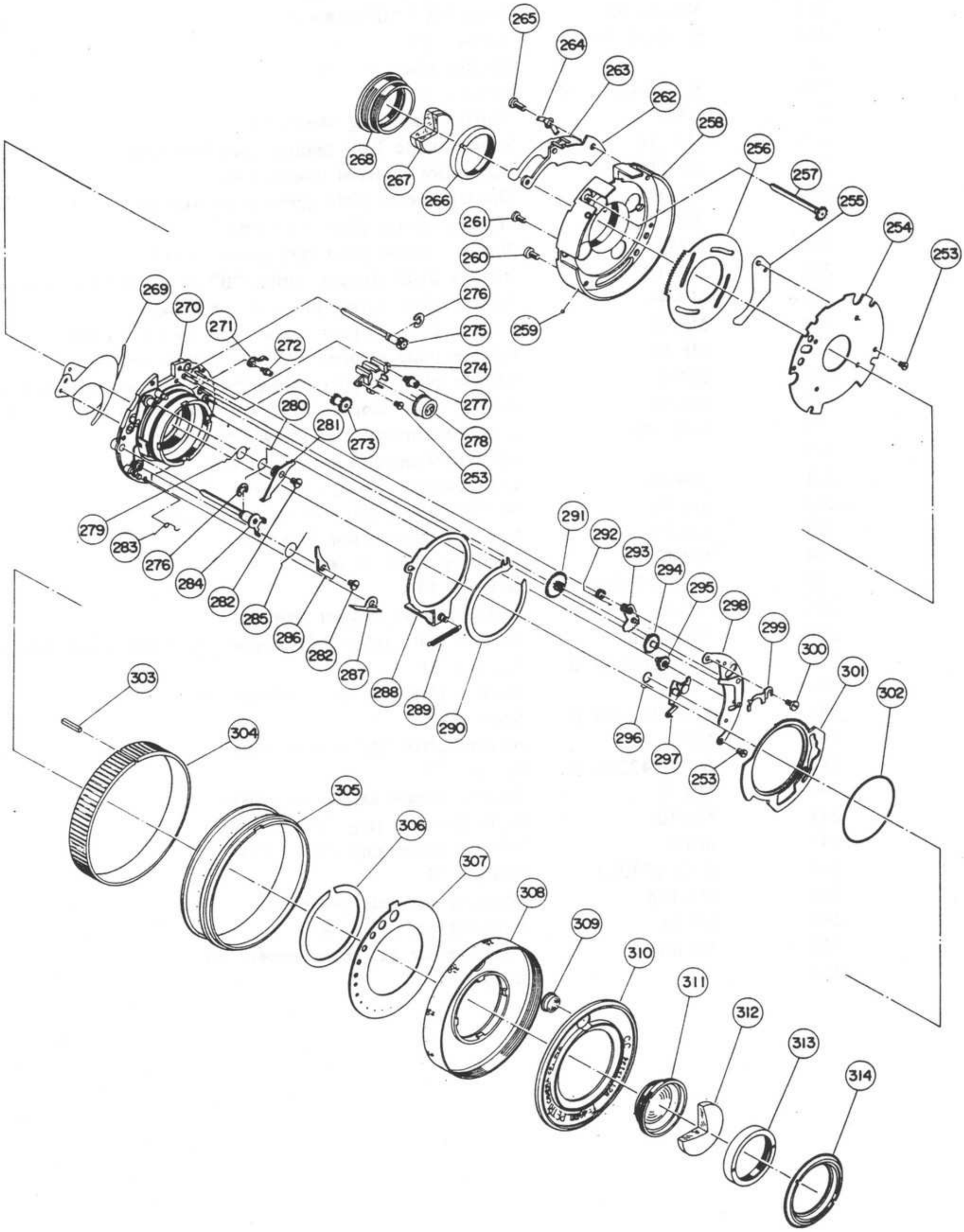

PARTS LIST

FIG.	PART NO.	DESCRIPTION	UNIT
253	MSB-50	Shutter set lever screw (セットリング押え板取付)	4
254	MSB-7	Diaphragm hold (絞り押え板)	1
255	MSB-5	Diaphragm blade (絞り羽根)	4
256	MSB-8	Diaphragm drive plate (絞り開閉板)	1
257	MSB-13	Diaphragm gear shaft (絞りギャー軸)	1
258	MSB-2	Shutter case (シャッターケース)	1
259		1.2 φ steel ball (1.2φ 鋼球)	1
260	SPB-145	Mirror gear screw (ミラーギャー台取付)	2
261	SPB-76	Delayed action gear screw (秒ギャー台取付)	1
262	MSP-34	Rotary switch base (接片ベース)	1
263	MSP-33	Switch base insulator (接片ベース絶縁板)	1
264	MSP-29	Lead holder (リード線押え板)	1
265	SPB-98	Mirror box screw "B" (ミラーボックス取付B)	1
266	MSB-6	Rear lens retainer (後玉押え)	1
267		Rear lens (後　玉)	1
268	MSB-4	Rear lens frame (後　枠)	1
269	MSP-5	Shutter blade (シャッター羽根)	2
270	MSB-1	Mount base (中　板)	1
271	MSP-18	Shutter speed gear "C" hold (スピードギャーC押え板)	1
272	MSB-22	Shutter speed gear "C" screw (スピードギャーC押え板取付)	1
273	MSB-15	Shutter speed gear "C" (スピードギャーC)	1
274	MSP-30	CdS Cell hold (CdS台)	1
275	MSB-16	Speed gear shaft (スピードギャー軸)	1
276		1.5φE - Ring (1.5φ Eリング)	2
277	MSB-32	Delayed action gear hold "A" (秒ギャー押え板台A)	1
278		CdS Cell (CdS)	1
279	MSW-1	Shutter blade lever "A" spring (開閉レバーA SP)	1
280	MSW-2	Shutter blade lever "B" spring (開閉レバーB SP)	1
281	SP-14	Shutter blade lever "B" (開閉レバーB)	1
282	PDB-123	Shutter blade lever screw (軸芯バネ取付)	2
283	MSW-4	Release lever "C" spring (レリーズレバーC SP)	1
284	MSB-29	Release lever "B" axle (レリーズレバーB軸)	1
285	MSW-3	Bulb lever spring (バルブレバーSP)	1
286	MSP-17	Shutter release lever "C" (レリーズレバーC)	1
287	MSP−3	ASA Click spring (CdSクリック板)	1
288	MSP-10	Shutter set lever (セットリング)	1
289	MSW-5	Shutter set lever spring (セットリングSP)	1
290	MSP-11	Shutter set lever retainer (セットリング押え)	1
291	MSP-26	Delayed action gear "A" (秒ギャーA)	1
292	MSW-6	Sector gear spring (秒扇形SP)	1
293	MSP-21	Sector gear (秒扇形ギャー)	1
294	MSP-27	Delayed action gear "B" (秒ギャーB)	1
295	MSP-22	Star-shaped gear (星　車)	1
296	MSW-7	Ankle base spring (アンクル台SP)	1
297	MSP-24	Ankle base (アンクル台)	1
298	MSP-19	Slow escapement holder (秒ギャー押え板)	1
299	MSP-32	CdS Cell holder (CdS押え板)	1
300	SPB-87	CdS Cell holder screw (ミラー蝶番取付)	1
301	MSP-9	Shutter speed cam (カ　ム　板)	1
302	MSW-8	Cam hold ring (カム板押えバネ)	1
303	MSP-35	ASA Indicator (ASA指標)	1
304	MSP-36	ASA Convert ring cover (作動リングレザー)	1
305	MSB-9	ASA Convert ring (ASA作動リング)	1
306	MSP-4	CdS Cell diaphragm hold (CdS絞り押えスナップ)	1
307	MSP-3	CdS Cell diaphragm (CdS絞り板)	1
308	MSB-7	ASA Scale ring (化粧環台)	1
309	IS2P-24	CdS Cell lens (受光レンズ)	1
310	MSB-52	Display ring (化　粧　環)	1
311	MSB-3	Front lens Cell (中　枠)	1
312		Front lens (前　玉)	1
313	MSB-5	Front lens retainer (前玉押え)	1
314	MSB-8	ASA Scale ring retainer (化粧環台押え)	1

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PETRI CØLOR 35 E - Fully Automatic

Fully Automatic(Rangefinder Type Camera)

TO REMOVE THE TOP COVER:

1. Remove the rewind knob in the normal manner.
2. Unscrew the retaining nut from around the rewind bushing. There is a washer glued to it but it need not be separated from the nut.
3. Lift the ASA dial and knob assembly .
4. Lift out a thin brass spacer washer.
5. Lift out 2 steel ball detents before they are lost.
6. Remove the screw at the right end of the top cover.
7. Lift off the top cover. The switch button in the left end will fall free.

NO BATTERY CONTINUITY TO METER - METER CHECKS OUT TO BE "ALIVE".

Check for broken or rotted wire under battery box. To replace the wire between the battery box and the circuit board under the front plate, it is necessary to pry out the cemter contact and insulator from inside the battery box. The insulator is cemented into the battery box. It is a good idea to remove the battery box also. If the wire was badly corroded, chances are that there is a build up of corrosion under the box. The screws holding the battery box are concealed by the center contact and insulator plate.

Remove the bottom plate held by 3 screws to expose wire routing.

Strip the leather from the front plate and remove the 4 screws exposed. Rotate the front plate around the shutter and lens assembly to provide access to the small board to which all the wires are routed.

Install new wire.

Disassembly to get to back of the shutter:

1. Remove the leather from the front plate.
2. Remove the front plate held by 4 screws. By turning the lens to the retracted position, it will give you enough room to lift the front plate clear of the body and lens with enough room to unsolder the black wire from the flash terminal. Below the screw which secures the P.C. Board there are 3 solder lands side by side, A black wire coming from topside goes on the land on the right. The black wire from the flash terminal on the front plate g oes to the center land. Unsolder the black wire from the middle land from the flash terminal to free the front plate for complete separation from the camera.
3. To remove the shutter and lens assembly from the camera body, unscrew the 1st and larger of 2 retaining rings visible in the back of the lens thru the film plane. Then note the routing of the wires before separation.

INTRODUCTION

OUTLINE ON THE MAIN MECHANISM

By a stroke of Wind lever (157) Wind lever shaft (179) running from top to bottom of the body rotates, the shutter set bar set up on Winding gear plate (184) is slid along the rack and shutter is cocked. At the same time the winding pawl on Shutter set gear plate(176) makes Sprocket(202) advance one frame of exposure through the intermediary of a gear. By setting the shutter Shutter set lever(288) turns and Shutter set lever spring(289) is tensioned.
By depressing the shutter button Shutter release plate(221) comes down, Shutter release lever "C"(286) turns through the intermediary of Release lever "B" axle(284) being released from Shutter set lever(288). Shutter set lever(288) turns by a tension of Shutter set lever spring (289), the pin on shutter set lever(288) knocks Shutter blade lever "B"(281), Shutter blade lever "A" turns, and the pin on the shutter blade lever shuttles along the groove on Shutter blade(269), letting Shutter blade(269) open and shut.
The shutter dial is located on top of the camera body, and by turning it Speed gear shaft(275) moves through the intermediary of gear train fitted on Gear plate(104). The gear on Speed gear shaft(275) makes Shutter speed cam(301) turn through the intermediary of Shutter speed gear "C"(273), and shutter speeds are varied by shape of the cam. When the diaphragm ring is turned, Diaphragm gear shaft(257) moves through the intermediary of gear train on Gear plate(104). Diaphragm drive plate(256) is moved by the gear on Diaphragm gear shaft(257) and the aperture composed by Diaphragm blade(255) varies by being slid along the groove. When the diaphragm ring is turned to set at B(Bulb) Shutter speed cam(301) moves and the pin on the bulb lever slips from the projecting part of Shutter speed cam(301). When the shutter button is depressed in this state Release lever "B" axle(284) pushes against the bulb lever, turning movement of Shutter set lever(288) is stopped on its way, and Shutter blade (269) stays open. When the shutter button is releassed Release lever "B" axle(284) returns to the original position and the shutter blade is closed. Synchronization circuit is closed when Shutter set lever turns to knock Shutter blade lever "B". By rotating Focusing wheel(8) located at the center of the top cover the gear fitted on Gear plate (104) turns through the intermediary of two gears fitted on Focusing wheel base (98), the turning movement is transmitted to Helicoid outer ring (245), Helicoid inner ring (246) goes forward or backward and then the correct focusing is done. At the same time the pin on Focusing plate (234) fitted on Helicoid inner ring (246) makes focusing bar (249) move. The end of Focusing bar (249) comes in contact with the cam of Cam follower (56) fitted on Viewfinder base (52) and makes Focusing needle lever (58) turn. The focusing needle fitted on Focusing needle lever (58) indicates a distance in the viewfinder. Turning movements of the shutter speed wheel and Aperture setting wheel are coupled to the movement of the exposure metering mechanism. The gear train on the Gear plate transmits a turning movement to the gear on Meter setting plate (133) and when meter gear "A" (135) is turned Exposure meter (130) turns. The meter needle swings 5 degrees per 1 E.V.

EXPLANATION ON SMALL STANDARD SCREW

A part represented by S00-000000 is Petri Standard Screw. The figure next to "S" such as S1, S2, S3, etc. shows the shape of screw head. The second figure to "S" such as S01, S02, S03, etc. means the grade of screws. The first and the second figure is the six figures show the diameter of screw; the third and the fourth figure show the length of screw; the fifth figure shows the material of screw; and the last figure in the six figures shows processing on the surface of the screw. For example.

S12-202500

means a flat-headed screw, the 2nd grade, diameter of screw = 2.0mm, and the length of screw = 2.5mm.

APPENDIX

Part numbers are generally in order of disassembling, and so assembling can be done in the reverse process of disassembling. In order to easily master disassembling, the disassembling processes in main apparatus are stated in Chapter 1.
Refer to the Appendix about tools and jigs.

CHAPTER I

1. DISASSEMBLY OF THE TOP COVER

Unscrew the Screw (6). Unscrew Focusing wheel screw (7) making use of Tool (K204003) and pull out Focusing wheel (8). Take off Back cover assembly (21), insert a screwdriver between the fork of Film-rewind pawl (84), turn Film-rewind crank assembly (9) in the counter-direction indicated by the arrow, and Film-rewind crank is taken out. Take off Film-rewind base assembly (13) making use of Tool (K204552), and then the top cover can be taken out upward.

Note: Note that Shutter release pin (102), Battery tester button (20) and Shutter assembly (19) are only laid. When assembling, shutter must be set at 1/250 second, and diaphragm at f/22.

2. DISASSEMBLY OF FILM-REWIND BASE

Take off the top cover. (Refer to 1.) Unscrew two pieces of Screw (44) and Film-rewind base screw (45), and then Film-rewind base (46) can be taken out.

3. DISASSEMBLY OF VIEW-FINDER BASE

Take off the top cover. (Refer to 1.) Let two leads (one in green and another in blue) come before View-finder base (52). Unscrew two pieces of Screw (51) and the Screw (50), and View-finder base (52) will be taken off. Since the meter needle is being into View-finder base (52) from the side of it, take out View-finder base (52) slantingly and upward, being careful not to damage the needle.

4. DISASSEMBLY OF GEAR PLATE

Take off the top cover. (Refer to 1.) Take off the View-finder base (52). (Refer to 3.) Unscrew Screw (95) and let Meter resistance assembly (96) come forward. Take off Slot cover spring (92). Unscrew three pieces of Screw (97) and Focusing wheel base (98). Unscrew Screw (100) and take off Tester connector base (101). Unscrew three pieces of Screw (103), and Gear plate (104) can be taken out upward.

5. DISASSEMBLY OF WIND LEVER

Take off the top cover. (Refer to 1.) Take off View-finder base (52). (Refer to 3.) Take off Gear plate (104). (Refer to 4.) Unscrew Wind lever screw (155) and take off Double wind stop plate (156). Take off Stop pawl spring (151) from Double stop pawl (153) and let Double stop pawl (153) go outside. Then, Wind lever (157) can be taken out upward.

Note: Wind lever spring (158) is being hooked at Wind lever and therefore be careful not to damage the spring when taking out Wind lever (157)

6. DISASSEMBLY OF WINDING GEAR PLATE

Take off the back cover. Unscrew three pieces of Screw (166) and take off Bottom plate "B" (167). Swing Wind lever (157) to the extent that it does not return to its rest position. Unscrew Screw (168) and let Battery contact base (169) go out the edge of the body. Then, swing Wind lever (157) completely and depress the shutter button. Unscrew two pieces of Screw (180) and take off Sprocket gear base (181). Unscrew Sprocket gear screw (199) and take off Sprocket gear (200) and Sprocket gear spring (201). Unscrew Winding gear screw (175), and take off Shutter set gear plate and Winding gear (178). Take off Ratchet pawl spring pin (182), unscrew two pieces of Screw (183), and Winding gear plate (184) can be taken out.

Winding gear plate (184) can be taken out more easily if it is done when Wind lever shaft (179) is being taken off above the camera after disassembling Top cover assembling (1), View-finder base (52) and Gear plate (104). (Refer to 1., 3., and 4.) However, this method has so many steps in disassembling that we recommend processing as stated in the above.

Disassembling method stated in the beginning is a little difficult, and therefore please note the following points:

> The difficult point is that the edge of Winding gear plate (184) bumps against pawls which the back cover locks. Therefore, move Winding gear plate (184) to Wind lever (157), putting the end of screw-driver in the hole of Winding gear plate (184). Pry Winding gear plate (184) and then, keeping a hold of it with a finger tip pry the gear plate (184) with a screw-driver from the bottom of it.

7. DISASSEMBLY OF SHUTTER

Take off the back cover, unscrew Shutter ring (31) making use of Tool (K204251), and Shutter assembly can be taken out. For taking off the assembly completely from body (252) it is necessary to unsolder each end of four leads (two in green, one in red and the other in black).

8. DISASSEMBLY OF SHUTTER PLATE

Strip of Leatherette "A" and "B" (29, 30), unscrew four pieces of Shutter plate screw (214), and Shutter plate (215) can be taken off. Pry it off when Shutter plate (215) is not easily taken off because of the binding agent soaked into Shutter plate. Since a lead (in black) is from the synchronization-terminal on Shutter plate (215), it is necessary to unsolder end of the lead at the Synchro-terminal base (230). Also, these works must be done with the lens barrel retracted.

9. DISASSEMBLY OF HELICOID RING

Take off the top cover. (Refer to 1.) Take off View-finder base (52). (Refer to 3.) Take off Gear plate (104). (Refer to 4.) Take off Shutter assembly (19). (Refer to 7.) Take off Shutter plate (215). (Refer to 8.) Take off Shutter release plate spring (222) from Shutter release plate (221), unscrew two pieces of Shutter release plate screw (220), take off Shutter release plate (221), and then Helicoid ring can be taken out by unscrewing four pieces of Screw (241).

10. DISASSEMBLY OF EXPOSURE METER

Take off the top cover. (Refer to 1.) Take off View-finder base (52). (Refer to 3.) Unscrew two pieces of Screw (127) and take off Meter shaft hold (128). Unscrew two pieces of Screw (129), and Exposure meter (130) can be taken out. Be careful not to hurt the meter needle when unscrewing Screw (129). Since the exposure meter and semi-valuable resistor on Meter resistance assembly (96) make a set, when you replace exposure meter with a new one, unscrew Screw (95), take off Meter resistance assembly (96), unsolder a lead (in yellow) at Tester connector base (101), and then take out the exposure meter together with Meter resistance assembly (96).

11. DISASSEMBLY OF ASA SCALE RING

Most defects in shutter mechanism can be corrected with ASA Scale ring (308) taken off. Take off ASA Scale ring retainer (314) making use of Tool (K 204252), and ASA Scale ring (308) can be taken out and the shutter mechanism is exposed.

CHAPTER II

ASSEMBLY AND ADJUSTMENT

The Parts List with illustrations of disassembled parts will be of a good reference for assembling works. The general rules in assembling, play for smooth operation, gear linkage, etc. are stated in the following.
As a general rules the disassembled parts must be cleaned up and rinsed, if necessary, before assembling. The lubricant and the binding agent must be correctly used.

1. WINDING MECHANISM

1-1. Assembling of Shutter set gear plate

The gear engagement between Shutter set gear plate (176) and the rack on Winding gear plate must be done as shown in Fig. 1.

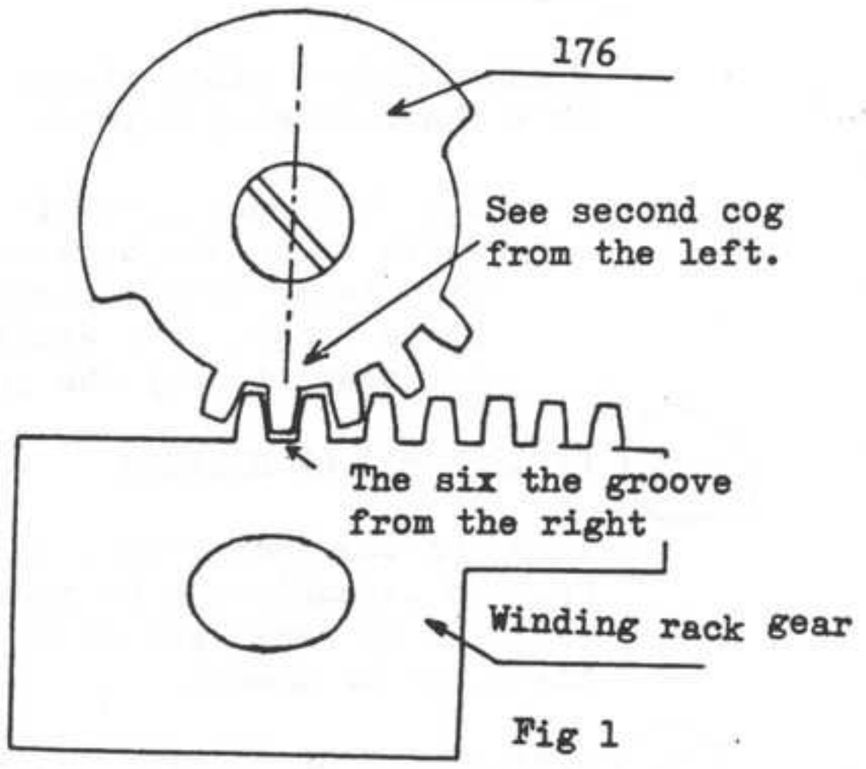


Fig 1

1-2. The vertical play on Wind lever shaft and Take-up spool must be given as bellow:

Wind lever shaft....about 0.1 to 0.2
Take-up spool ....about 0.4

1-3. Fixing of Wind lever

As shown in Fig. 2 hook Wind lever spring (158) on Wind lever (157) and after inserting Wind lever shaft (179) into the body hook another end of the spring at the pin on the body. As shown in Fig. 3 place a gain of Double wind stop plate on the pin of Wind lever (157), and fix it with Wind lever screw (155).

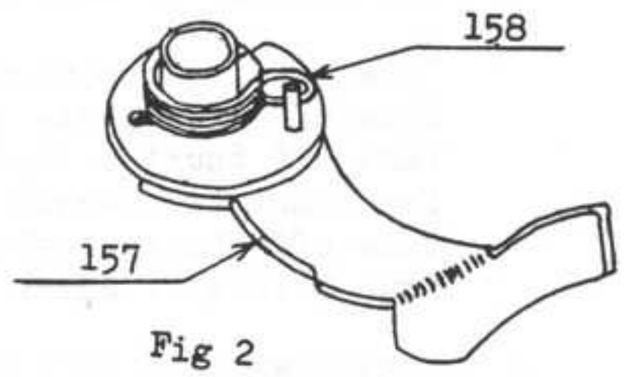


Fig 2

1-4. Fixing of Battery contact base

Swing Wind lever (157) to the extent that it does not return to its rest position, and in this state fix Battery contact base (169) with Screw (168). Adjust the switch contacts so that a space between the contact A and B will be kept to be about 0.5 when Wind lever (157) is being at its rest position. See Fig. 4.

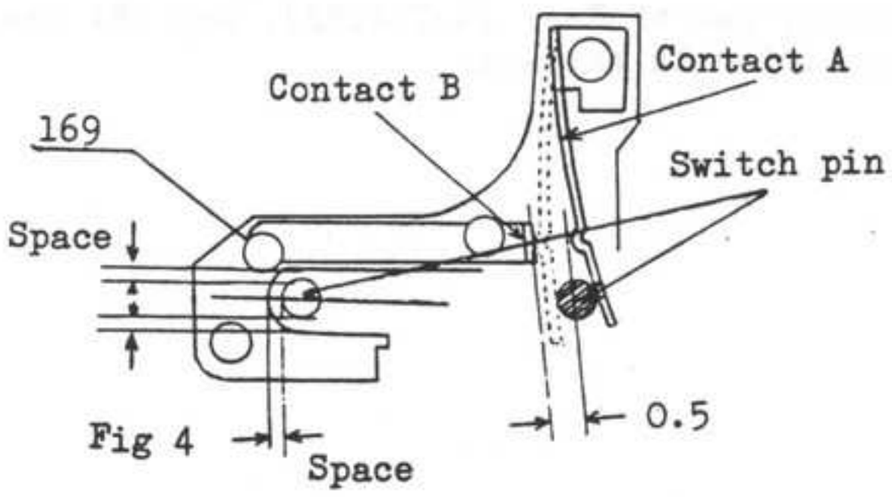


Fig 4

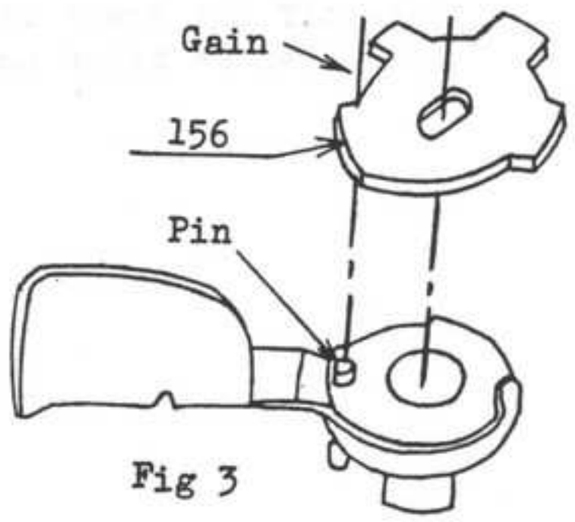


Fig 3

1-5. Adjustment of Ratchet

Make adjustment of Eccentric ratchet washer (173) so that the end of Ratchet pawl (174) will still position between the teeth of Winding gear (178), leaving 1/4 of the width between gear teeth, at the very time when Wind lever (157) has been fully swung. See Fig. 5.

NOTE: This adjustment must be done so that the end of Ratchet pawl (174) will position as deeply as possible between the teeth of Winding gear (178).

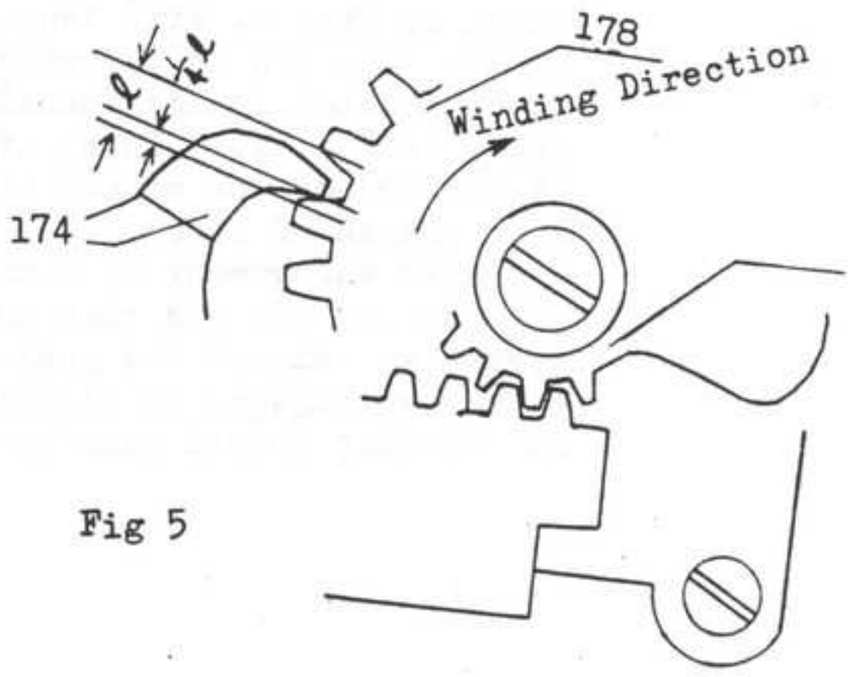


Fig 5

After making the above adjustment swing Wind lever (157) slowly, and make sure that Ratchet pawl (174) and Double stop pawl (153) operate in order 1 - 2 - 3 in Fig. 6. When doing this trial operation, Take-up spool (194) must be depressed on with your finger, taking the film tension into consideration.

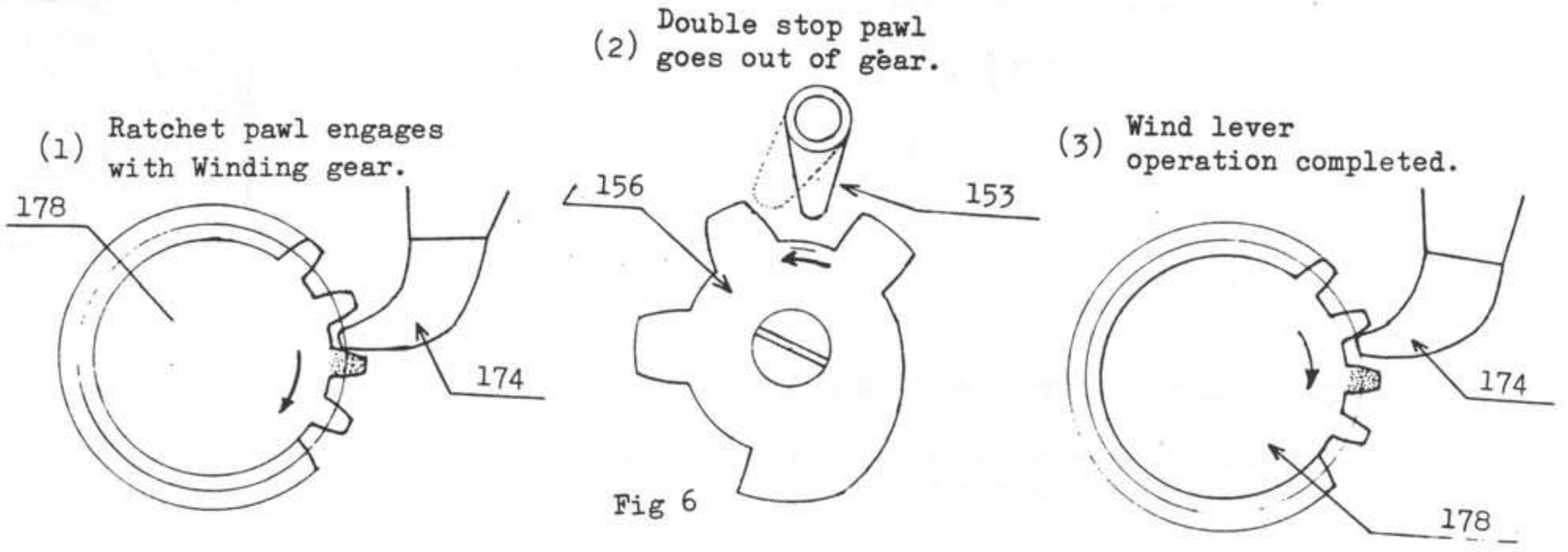


Fig 6

2. FRAME COUNTER MECHANISM

2-1. Fixing of Counter drive arm

Be sure that as shown in Fig. 7 a space between the side of Counter drive arm "A" (162) and Drive arm pin (161) is 0.1 to 0.2 when Wind lever (157) has slowly returned to its rest position after it was wound up.

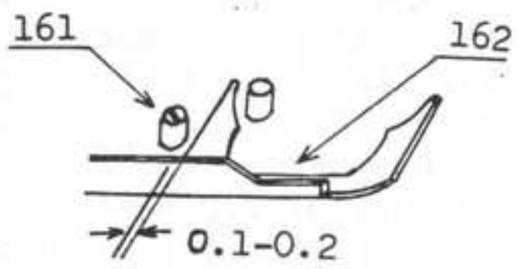


Fig 7

2-2. Position adjustment of Stopper pawl and Frame advance pawl

Make adjustment of Stopping pawl (80) so that the end of it may come in the third pitch of Counter base (74) from its notch as shown in Fig. 8. At the same time adjust Frame advance pawl so that it may come over a half to one third of the 7th pitch of Counter base (74) from its notch. Adjust and make a space of a half to one third of a pitch between the tooth of Counter base (74) and the end of Stopping pawl (80). See Fig. 8'.

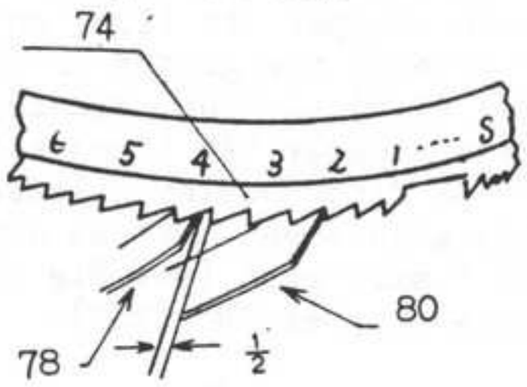


Fig 8

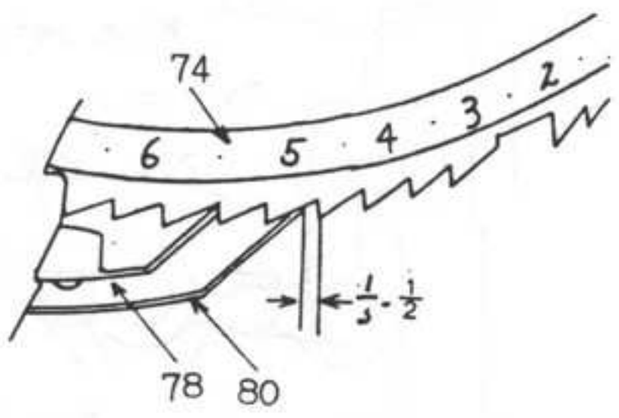


Fig 8'

K204209

3. Fixing of Helicoid ring

Fix the helicoid assembly temporarily, as shown in Fig. 9, with four pieces of Screw (241). The pin on Focusing plate (234) has to be located inside Focusing bar (249) as shown in Fig. 10. Then, attach Jig (K 204209) on the camera body, and tighten four pieces of Screw (241), making sure of a proper engagement of gears between each gear on the jig and that on the hilicoid assembly. Adjust the gear position so that each gear engages as tightly as posible, but not hurting smooth gear movement.

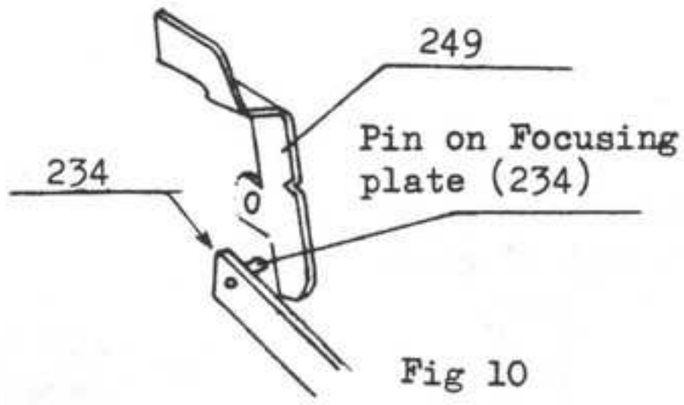


Fig 10

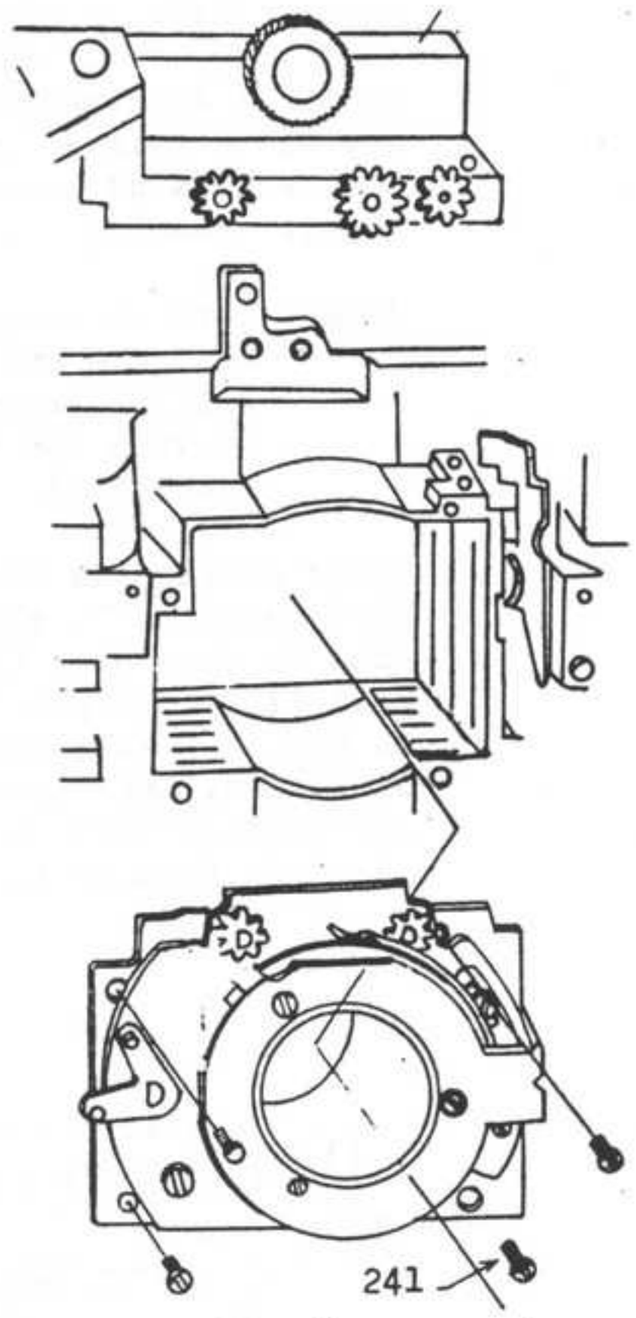


Fig 9

4. ADJUSTMENT OF SHUTTER RELEASE PLATE

4-1 Release between Shutter release plate and Release plate stopper "A" & "B"

When the helical ring is retracted, Release stopper "A" (226) must be in contact with the camera body as shown in Fig. 12 so that it can prevent Shutter release plate (221) from coming down. Then let the helical ring come out by making use of Jig K204209 and when it comes on to the infinity (click stop) Release plate stopper "B" (228) should certainly go through the groove on Helicoid outer ring (245) as shown Fig 12, and Release plate stopper "A" (226) keep a distance of 0.5 mm from Shutter release plate (221). This adjustment must be done by bending the * mark part (see Fig 11) of Release plate stopper "B" (228).

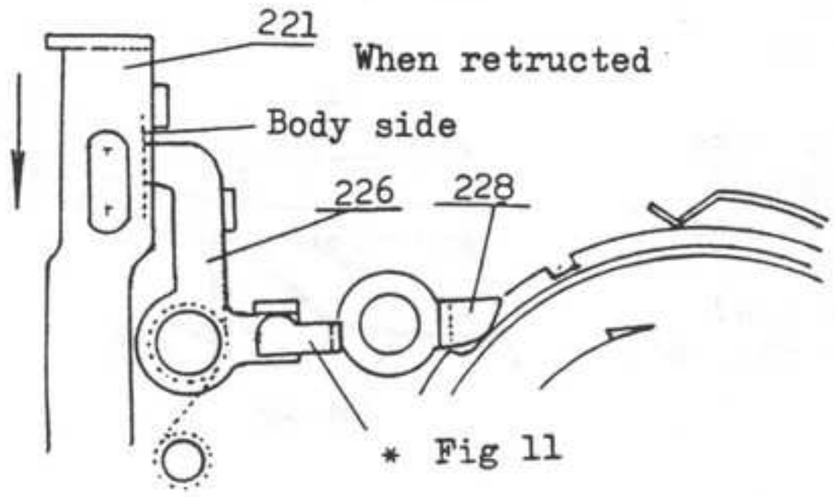


Fig 11

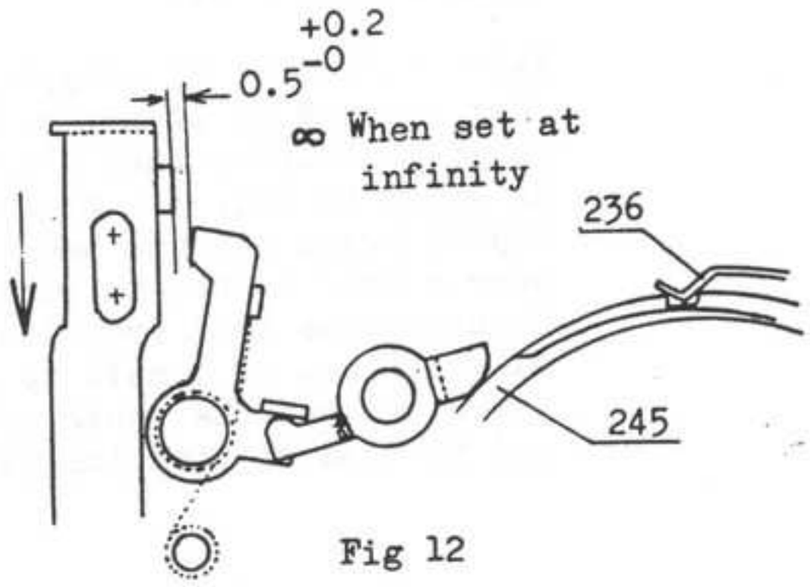


Fig 12

Assembling of Shutter

Set the shutter speed at 1/250 and the diaphragm at f/22 by dials on top of camera body, and also operate axes for shutter speed and diaphragm on the shutter assembly and set shutter at 1/250 and diaphragm at f/22.
As shown in Fig 15, fit three D-shape axes on the side of the shutter assembly to D-shape holes of the gear and release lever on the camera body and tighten them with Shutter ring (31) from behind the body by using Tool K204251. When shutter is set by actuating Wind lever (157), Double stop pawl (153) should stop against Double wind stop plate (156) at such a position as illustrated in Fig 16 then operate Wind lever (157) again and confirm that Wind lever (157) can not be wound also Sprocket (203) does not transport film. Further, when a thumb is let go of Wind lever (157) suddenly at a position where it has been fully wound, it can not be wound again.
In case Wind lever (157) is wound again, bend A part of Winding gear plate (184) with Tool 204118. (Fig 15)

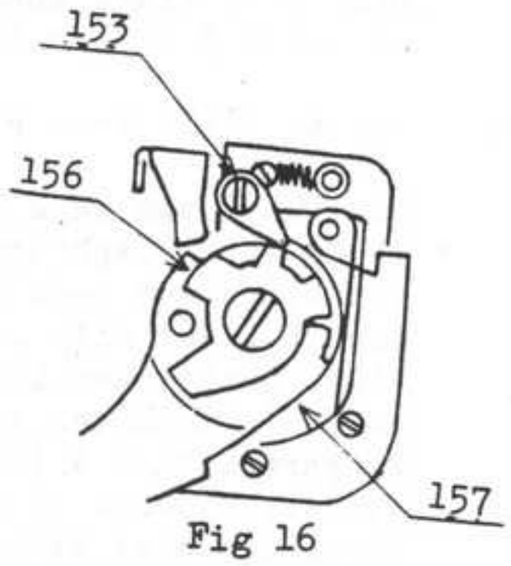


Fig 16

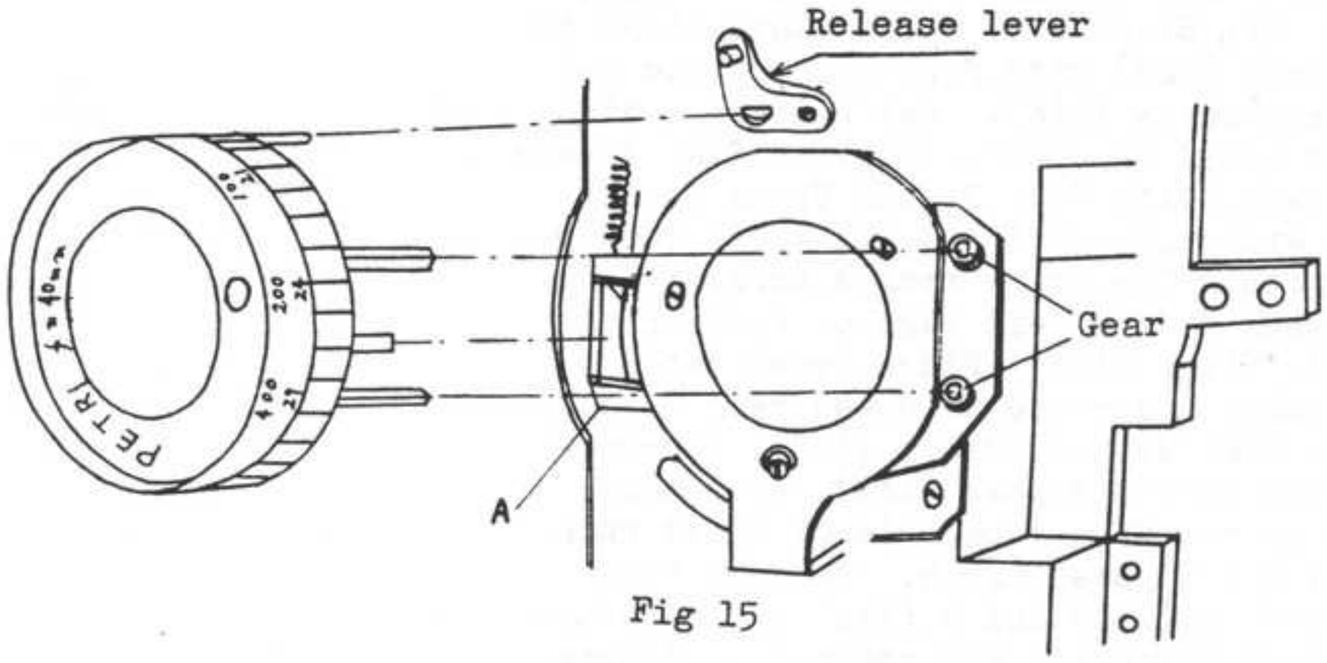


Fig 15

6. Gear Plate Assembly

6-1. Fixing Gear plate assembly

Set shutter speed at 1/250 sec. and diaphragm at 22 then set the gear train at the same shutter speed and diaphragm. Drop gear plate assembly into the body and fix with 3 screws (103).

6-2. How to build Gear plate assembly

Fix Diaphragm rack B (126) to Gear plate (104) with Diaphragm rack B screw (125). Fix Diaphragm rack A (124) to Diaphragm rack B (126) with 2 Diaphragm rack A screws (123) positioned in the center of a long hole of Diaphragm rack A (124). (Fig. 17) Diaphragm rack A (124) should move by its own weight when it is tilted. Interlock Disphragm dial stopper (119) with Diaphragm rack A (124). (Fig. 19)

Fix Speed gear base (122) to Gear plate (104) with Tester base screw (106). Be sure that A, back of Diaphragm rack A (124), touches B, round part of Speed gear base (122) to prevent sideward shake. (Fig. 18) But it will not impair movement of Diaphragm rack. Place Diaphragm dial FW A (117) and FW B (118) and fasten with 1.5 Ø E - ring (116). Fix Speed dial click plate (115) to Gear plate (104) with S.D. click plate nut (113) and screw (114). Set Diaphragm dial stopper (119) in accordance with Fig. 19 and Meter rack, with Fig. 20 and Speed rack A (111), with Fig. 21-A and fix Speed rack B (112) with 2 Diaphragm rack A screws (110) positioned at the left edge of Speed rack A (111). (Fig. 21-B) Place Speed rack guide (109) underside of Speed rack B (112) and fix them with 2 screws (108), loosen 2 Diaphragm rack A screws (110), move them to the center of a long hole of Speed rack A (111) and tighten again. Be sure that Speed rack A (111) and B (112) and relevant gears move correctly and smoothly. Remove Tester base screw (106) from Gear plate (104) and fix S.D. click spring (107) with Tester base screw (106)..

Fix S.D. click spring (107) to Speed dial click plate (115) with S.D. click screw (105) in such a manner that the click part of S.D. Click spring (107) pushes the side of Speed dial click plate (115). Fixing position of S.D. click spring (107) should be so adjusted that the extreme point of S.D. click spring (107) falls in the cut of Speed dial click plate (115) on the side of 1/250 sec. and B evenly.

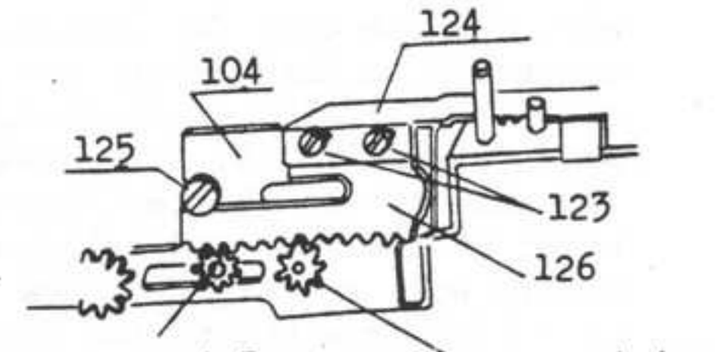


Fig 17

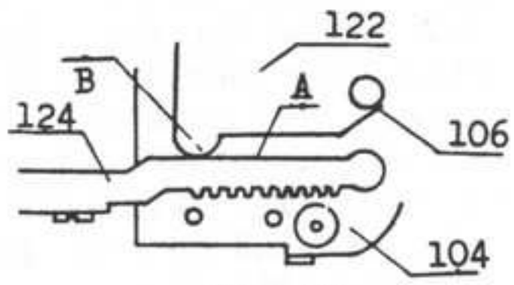


Fig 18

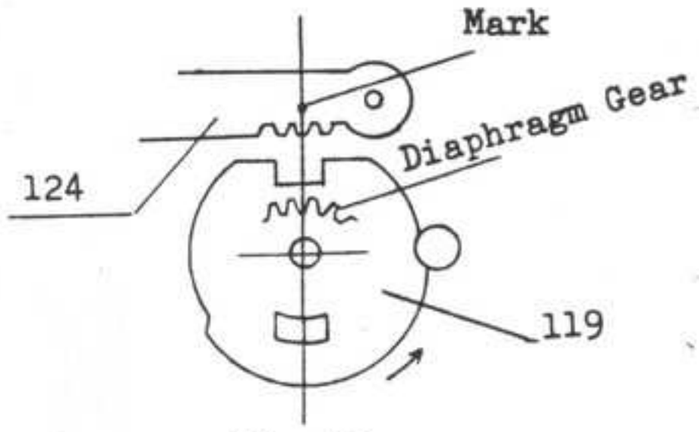


Fig 19

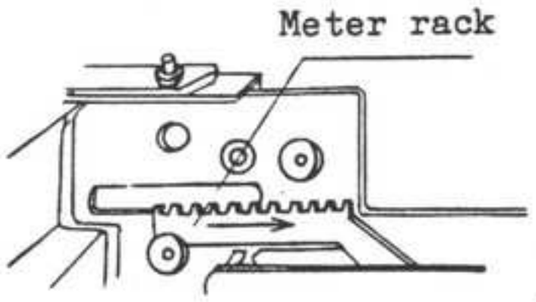


Fig 20

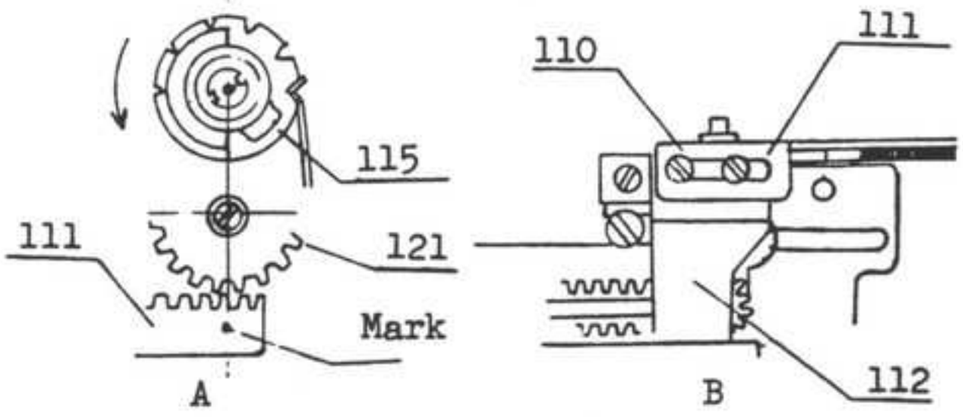


Fig 21

7. Fixing Meter Assembly

Set shutter speed at B and diaphragm at f 2.8. Turn Meter setting plate (133) fully clockwise, align it to the hole of Gear plate (104), and Meter gear C will interlock with Meter rack gear then fix them with 2 screws (129). Put meter needle insulator between Meter needle stopper (137). Fix Meter shaft hold (128) with 2 screws (127). Adjust the fixing position of Meter gear "A" to keep the needle off the stopper and also below the level.
Wiring should be done in accordance with Wiring Diagram shown in attachment.

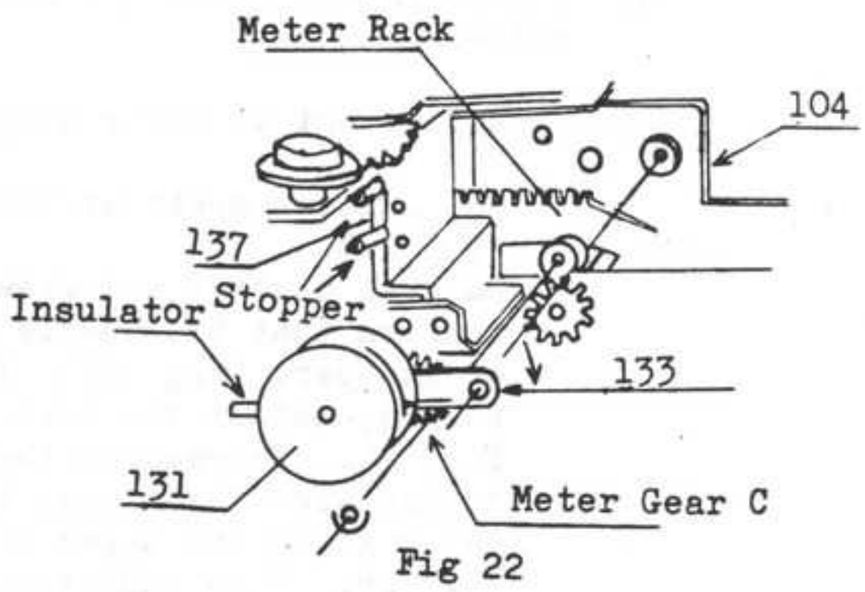


Fig 22

8. Adjustment of Range Finder

8-1. Fixing View-finder base

Retract lens barrel. Put the meter needle in the slot on the side of View-finder base (52) and fix View-finder base (52) with 3 screws (50 and 51).

8-2. Adjustment of Infinity of Lens

Take out Shutter plate assembly (215). (Refer to 8 of SECTION I.) Open the back cover, place a focusing glass (K 204010) on the film plane, view ∞ chart in collimator, and adjust focus by turning Focusing wheel (8). When correct focus is obtained, loosen screw (235), align the extreme point of Distance scale stopper (236) to the click out of Helicoid outer ring (245) and tighten screw (235)

Needle at ∞ position
Fig 23

8-3. Adjustment of Distanc Scale

Adjust infinity of lens. (Refer to 8-2.)
Turn Focusing wheel (8) to set helicoid at ∞.
View the finder and make sure if the needle is at the center of ⛰. (Fig. 23)
When it is not just at the center, bend the part A to have it come to the center. (Fig. 24) Focus at 1 meter (3.3 feet) (🧍) or 2 meter (7 feet) with a focusing glass (K204010), view the finder and make sure if the needle is at the nose of 🧍 or 2 meter (7 feet). When it is out of place, bend the part B for adjustment. (Fig. 24)
Since ∞ position may become inaccurate after adjustment, recheck is necessary. This adjustment needs to enlarge the moving range of the needle, which will be done by moving the contact point of Focusing needle lever (58) in the direction of ⟷ from the fulcrum of Cam follower (56).

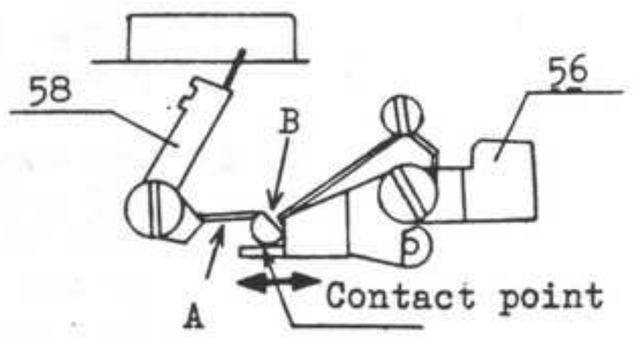


Fig 24

9. Adjustment of Meter (Be sure to insert mercury battery.)

9-1. Adjustment of Meter stopper

Set shutter speed at 1/60 sec. and diaphragm at f 2.8.
Release shutter and view the finder to confirm that the needle is at the lower side of stopper. (Fig. 25) When adjustment is needed, adjust the lower side stopper of Fig. 26. Depressing the battery tester button view the finder to ascertain that the meter is at the upper side of stopper of Fig. 26. When adjustment is needed, adjust the upper side stopper of Fig. 26. Battery tester switch is shown in Fig. 28.

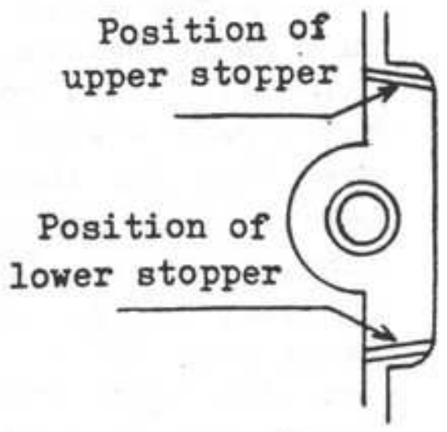


Fig 25

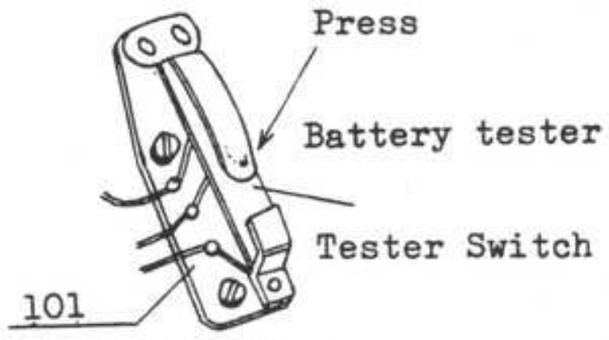


Fig 28

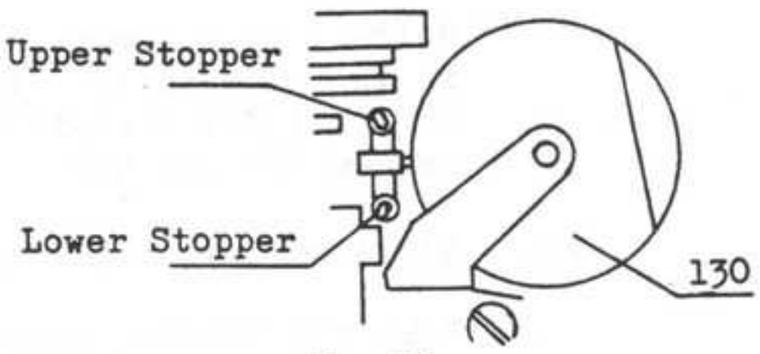


Fig 26

9-2. Adjustment of LV

Wind Winding lever (157) and set ASA index at ASA. 100.

LV 9: Set shutter speed at 1/30 sec., place CdS cell on the LV 9 of the light box window, turn the aperture wheel to set the needle in the center of the red circle. (Fig. 27)
Ascertain that the scale of the aperture wheel indicates f 4 ± ½ then. If it is wrong, adjust it by turning the contact piece of meter resistance A of Fig. 29.

LV 15: Set shutter speed at 1/250 sec., place CdS cell on LV 15 of the light box window, turn the aperture wheel to set the needle in the center of the red circle.
Ascertain that the scale of the aperture wheel indicates f 11 ± ½.
If it is wrong, adjust it by turning the contact piece of meter resistance B of Fig. 29.

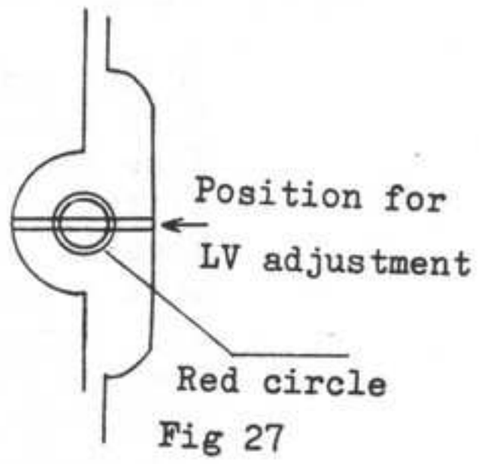


Fig 27

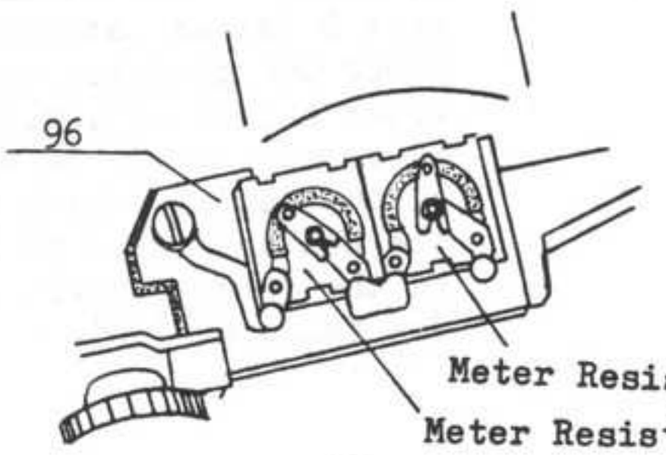


Fig 29

LV 12: Set sutter speed at 1/125 sec., place CdS cell on LV 12 of the light box window, turn the aperture wheel to set the needle in the center of the red circle.
Ascertain that the scale of the aperture wheel indicates f 5.6 ± ½.
If it is wrong, adjust the contact piece of meter resistance A and B to bring all three points (LV 9, 12, and 15) within the limit.

10. Shutter Assembly

10-1. Assembly of Diaphragm blade

Insert Diaphragm gear shaft (257) into Shutter case (258). Put Diaphragm drive plate (256) in, interlocking its gear part with that of Diaphragm gear shaft (257). Turn Diaphragm gear shaft (257) fully in the direction of an arrow. (Fig. 30) Build 4 Diaphragm blades (255) as shown in Fig. 31, adjust their aperture to match the opening of Diaphragm drive plate (256), place Diaphragm hold (254) on and fix them with Shutter set lever screws (253).

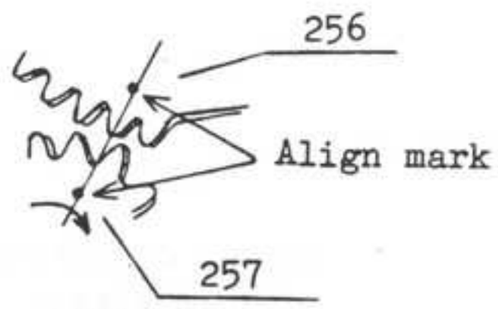


Fig 30

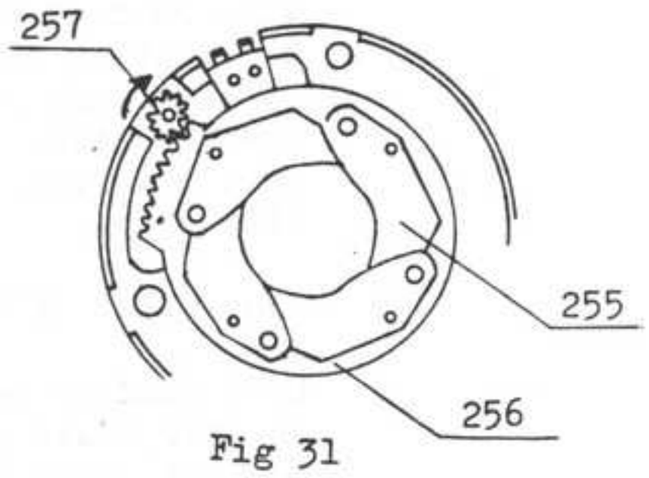


Fig 31

10-2. Fixing Shutter speed gear "C"

Fix Shutter speed gear "C" (273) interlocking with Speed gear shaft (275) as shown in Fig. 32, place Shutter speed gear "C" hold (271) on, and fix them with Shutter speed gear "C" screw (272).

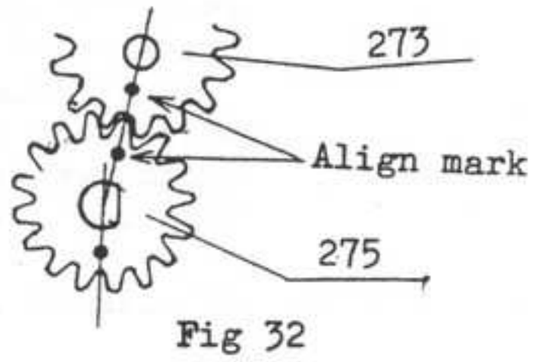


Fig 32

10-3. Adjustment of interlocking between Ankle and Star-shaped gear (295)

The state of interlocking is adjusted by turning the eccentric pin. (Fig. 33 and 34)
After Slow escapement holder (298) is installed, ascertain that Sector gear (293) operates coupled perfectly with Ankle base (297).

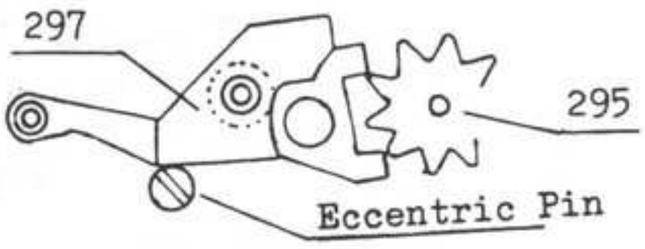


Fig 33

Adjustment of Interlocking

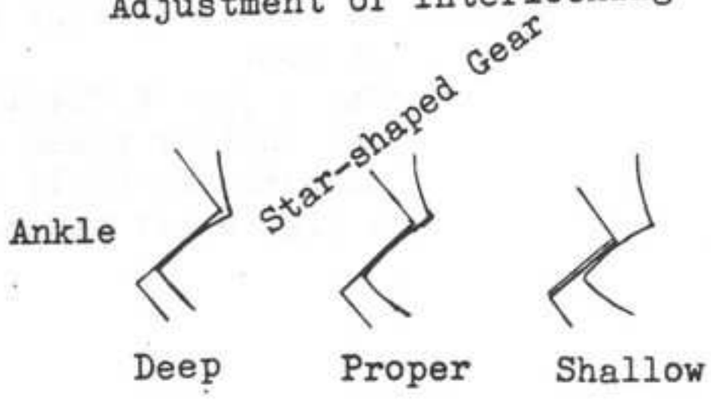


Fig 34

10-4. Spring tension of important operational parts

Operational force of the following parts are to be measured at the state of Fig. 35.

Sector gear (293) 18 ± 2 gr
Shutter blade lever "A" 65 ± 1.0 gr
Shutter blade lever "B" (281) 16 ± 1.5 gr
Bulb lever 4 ± 1 gr

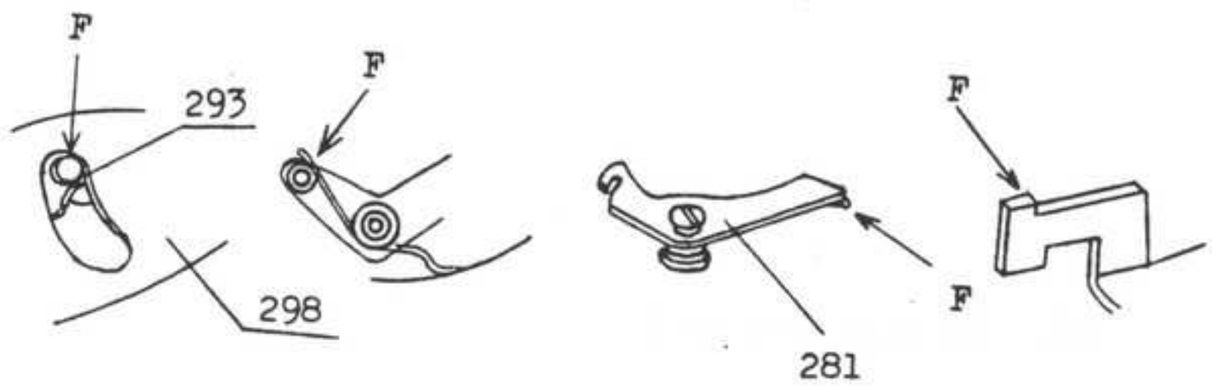


Fig 35

10-5. Operational relation between Shutter release lever "C" (286) and Shutter blade lever "B" (281)

Wind Shutter set lever (288) slowly and Shutter release lever "C" (286) comes to the setting position first then Shutter blade lever "B" (281) must come out. Reverse is wrong. (Fig. 36)

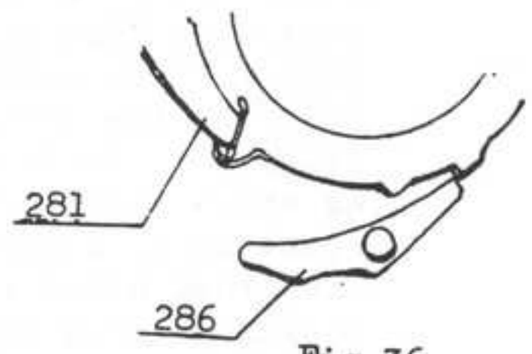


Fig 36

10-6. Adjustment of X contact

Hold Shutter set lever (288) by hand, open Shutter blade (269) slowly and confirm the contact position between Shutter blade lever "B" (281) and X contact. Shutter blade lever "B" must touch X contact at the position of Shutter blade (269) whose opening diameter is 10.3 mm. After adjustment this should be checked again by the shutter tester.
Time lag -0.2 to +0.5 ms

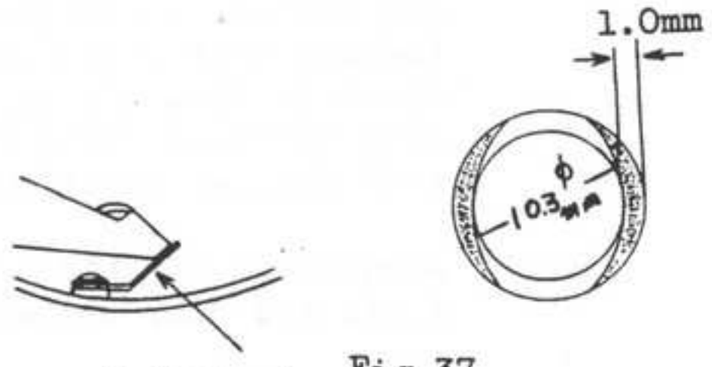


Fig 37

10-7. Adjustment of speed

Fig. 38 shows relative position between Shutter speed cam (301) and sector gear drive plate pin. When correct speed can not be obtained, mend it by modifying the shape of cam.
Use a jig (K 304013) when testing speed by the shutter speed tester. If shutter assembly is built in the camera, use of a jig is not necessary.

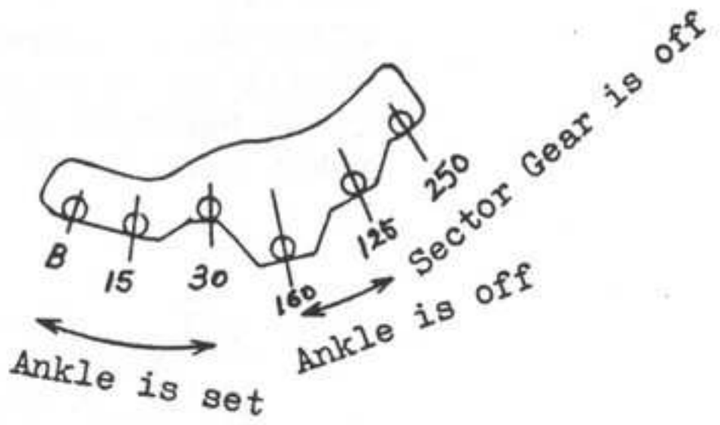


Fig 38

11. Fixing ASA Scale Ring

Place a cut of ASA Convert ring (305) on the side of the body on CdS cell. Lay the beggest hole of CdS Cell diaphragm (307) which is fixed to the back of ASA Scale ring (308) upon CdS Cell window and fix them with ASA Scale ring retainer (314) with a jig (K204252).

SECTION III: TROUBLE AND REPAIR

TROUBLE	CAUSE	REPAIR
WINDING		
Impossible to wind and release	Shutter blade lever "B" (281) not working smoothly or short of wound amount causes the pin-point of Shutter set lever (288) to hook on Shutter blade lever "B" (281).	Mend movement of Shutter blade lever "B" (281), or change Shutter set lever (288) or bend the arm of Shutter set lever (288) to keep its return about 1.0 mm against Shutter set lever (288) when shutter is set. When changing Shutter set lever (288), refer to 10-5 of SECTION II, when bending its arm, assure smooth movement of Shutter set lever (288).
Impossible to wind	1. Distance scale stopper (236) touches the edge of Winding gear plate (184)	Bend the part of Distance scale stopper (236) where Winding gear plate (184) touches.
	2. The arm of Shutter set lever (288) touches Screw (183).	Bend the arm of Shutter set lever (288).
	3. Shutter release plate (221) does not return.	Check contact between Shutter plate (215) and Shutter release plate (221) or movement of Shutter release plate (221).
Wind lever races.	Winding pawl of Shutter set gear plate (176) does not move well or Winding pawl spring (177) is off.	Mend the movement of winding pawl or fix Winding pawl spring (177).
Wind lever does not return.	1. Double stop pawl (153) does not come off Double wind stop plate (156)	Referring to 1-5 of SECTION II, scrape the edge of Double wind stop plate (156) with a diamond file.
	2. The pin of Wind lever (157) touches the edge of Counter drive arm "A" (162).	Referring to 2 of SECTION II, bend the side of Counter drive arm "A" (162) to keep clearance of about 0.2 mm.
	3. Counter drive arm "A" and "B" (162 and 164) do not move well.	Mend the shape so that they may move smoothly.
	4. Frame advance pawl (78) touches Film counter window (17).	Fix Film counter window (17) tightly or scrape the edge of Frame advance pawl (78)
Double winding is possible.	Double stop pawl (153) does not move well or Stop pawl spring (151) is off.	Mend movement of Double stop pawl (153) or fix Stop pawl spring (151).

TROUBLE	CAUSE	REPAIR
Winding is heavy.	1. Winding rack gear does not move smoothly or Winding rack gear bites Shutter set gear plate (176) too deep.	Remove Winding gear plate (184) and mend the movement of Winding rack gear or turn the adjusting screw of Winding gear plate (184) to ensure proper biting between two gears.
	2. Film-rewind pawl (84) does not move smoothly.	Check and clean each part of Film-rewind base (46), Film-rewind gear B (48), Film-rewind gear C (49), or replace it ascertaining smooth movement of each part.
REWINDING		
Impossible to rewind	Film-return gear B (48) or Film-return gear C (49) breaks or deforms.	Replace it.
Feeling stuck or rough in rewinding	1. Each Film-return gear does not bite properly or there is some foreign matter in it.	Check and mend biting of each gear or disassemble, clean, and assemble it.
	2. Fixed surface of Film-return gear B (48) is reverse.	Fix Film-return gear B (48) with round corner surface facing the back of Film-rewind base (46).
FILM TRANSPORTATION		
Pictures are largely overlapped.	Winding rack gear returns too much when shutter is set.	Referring to 5 of SECTION II, bend the contact part of winding rack gear with Shutter set lever (288) with a jig (K204118).
Pictures are a little overlapped.	There is much play between Sprocket gear (200) and connecting pin of Sprocket axle (202).	Turn Sprocket gear (200) 180° and put again or replace it holding play within 0.15 mm.
Film is not transported.	Sprocket gear (200) does not return so Sprocket (203) does not rotate.	Mend vertical movement of Sprocket gear (200).
Take-up spool races.	There is much vertical play in Take-up spool (194).	Put Take-up spool washer (19) on top of Take-up spool (194) to hold vertical play about 0.2 mm.

TROUBLE	CAUSE	REPAIR
FILM COUNTER		
Film counter does not advance.	1. Cog of Counter base (74) breaks or there is much vertical play in it.	Replace Counter cog (74) or bend Counter stopper plate (72) to hold vertical play about 0.2 mm.
	2. Frame advance pawl (78) is not engaged with Counter base (74) properly.	Referring to 2 of SECTION II, adjust the position by Counter drive arm "B" (164)
	3. Frame advance pawl (78) does not advance properly.	Referring to 2 of SECTION II, bend the arm of Counter drive arm "A" which is connected with the pin of Wind lever (157).
	4. Tip of Frame advance pawl (78) or Stopper pawl (80) is not engaged with the cog of Counter base (74) sufficiently.	Bend the tip of Frame advance pawl (78) or Stopper pawl (80) to engage with the cog of Counter base (74) about 0.5 mm deep.
Film counter does not return.	1. Counter scale (75) touches Counter reset lever (87) or Frame number indicator (82).	Adjust the position of Counter reset lever (87) or mend the bend of Frame number indicator (82).
	2. Counter reset pin (88) does not move well.	Adjust it to move smoothly.
	3. There is a space between Counter reset lever (87) and the head of Counter reset pin (88).	Bend Counter reset lever (87)
	4. The tip of Frame advance pawl (78) or Stopper pawl (80) is positioned high.	When counter is released, each tip of pawl is positioned about 0.7 mm below the cog of Counter base (74). The adjustment is done by bending each tip of pawl or the raised piece of Frame advance pawl (78)
Film counter advances two graduations.	1. Frame advance pawl (78) is not engaged with the cog of Counter base (74) properly.	Referring to 2 of SECTION II, adjust the position by Counter drive arm "B" (164).
	2. Frame advance pawl (78) advances too much.	Referring to 2 of SECTION II, bend the arm of Counter drive arm "A" (162) which is connected with the pin of Wind lever (157).
	3. There is a space between Drive arm pin (161) and Counter drive arm "A" (162)	Referring to 2 of SECTION II, bend the arm of Counter drive arm "A" (162) to hold a space within 0.2 mm.

TROUBLE	CAUSE	REPAIR
SHUTTER BUTTON		
Shutter button cannot be pressed when the lens reaches the infinity position.	1. Release plate stopper "A" (226) does not work smoothly or Release plate stopper spring "A" (227) is off.	Adjust the movement of Release plate stopper "A" (226) or fix Release plate stopper spring "A" (227).
	2. Adjustment of Release plate stopper spring "B" (228) is wrong.	Referring to 4 of SECTION II, make adjustment again.
Shutter button can be pressed when the lens is retracted.	1. Release plate stopper "B" (228) does not work smoothly or Release plate stopper spring "B" (227) is off.	Adjust the movement of Release plate stopper "B" (228) or fix Release plate stopper spring "B" (227)
	2. Adjustment of Release plate stopper spring "B" (228) is wrong.	Referring to 4 of SECTION II, make adjustment again.
Shutter button does not return.	1. Shutter release plate (221) does not work smoothly.	Check the movement of Shutter release plate (221) and connection between Shutter release plate (221) and Shutter plate "B" (240).
	2. Shutter release plate (221) touches Shutter plate (215).	Mend Shutter release plate (221) and the surface of Shutter plate (215).
Shutter button is stuck.	Connection between Shutter button and Speed dial gets stuck.	Move Shutter button up and down against Speed dial making connection smooth. Clean and put GM 1 grease.
Shutter button can be pressed too deep or shutter cannot be released.	The arm of Shutter release plate (221) which links Shutter plate "B" (240) is not properly adjusted.	Bend the arm of Shutter release plate (221) downward. After adjustment turn Focusing wheel (8) to retract the lens and ascertain that the shutter cannot be released.
HELICOID		
Feeling heavy in stop position of Focusing wheel	1. Fixing position of Distance scale stopper (236) is wrong.	Adjust the degree of engagement between the groove of Helicoid outer ring (245) and the end stopper of Distance scale stopper (236)
	2. The pin of Focusing plate (234) touches the body when the helicoid is retracting.	Bend the arm of Focusing plate (234).
	3. There is foreign matter in the helical part of Helicoid inner ring (246)	Turn Focusing wheel (8) to extend the helicoid to the nearest distance and clean or replace the helicoid.

TROUBLE	CAUSE	REPAIR
Feeling rough or sticky in rotation of Focusing wheel.	1. Focusing gear B on the side of Focusing wheel base (98) is not properly engaged with Focusing gear C on the side of Gear plate (104)	Loosen Screw (97) and adjust the fixing position of Focusing wheel base (98)
	2. Focusing plate (234) does not slide smoothly on Shutter plate "B" (240).	Polish the sliding part of Focusing plate (234).
	3. There is foreign matter in the helical part of Helicoid inner ring (246)	Turn Focusing wheel (8) to extend the helicoid to the nearest distance and clean or replace the helicoid.
	4. Helicoid outer ring (245) does not fit Shutter plate "A" and "B" (242 and 240) well.	Replace the helicoid.
	5. Assembly of each part goes wrong because of drop or strong shock.	Replace the helicoid.
Helicoid cannot be retracted.	1. There is foreign matter inside Helicoid inner ring (246)	Turn Focusing wheel (8) to extend the helicoid to the nearest distance and clean or replace the helicoid.
	2. Each coupling shaft (257, 276, and 284) is not engaged with the speed gear on the side of Shutter plate "B" (240) properly because the fixing position of shutter is out of place.	Adjust the fixing position of shutter.
Helicoid is loose.	1. The screw of Focusing plate (234) is loose.	Tighten Shutter release pin (232) and Focusing plate screw (233).
	2. There is a space between the sliding part of Focusing plate (234) and Shutter plate "B"	Punch the sliding part of Shutter plate "B" to hold a space within 0.02mm.
	3. Helicoid inner ring (246), Helicoid outer ring (245), Shutter plate "B" (240), and Shutter plate "A" (242) are not fit well.	Replace the helicoid.
Click is weak at infinity.	Pressure of Distance scale stopper (236) is weak.	Bend the click part of Distance scale stopper (236) about 2m so that it may click in the groove of Helicoid outer ring (245) tightly.

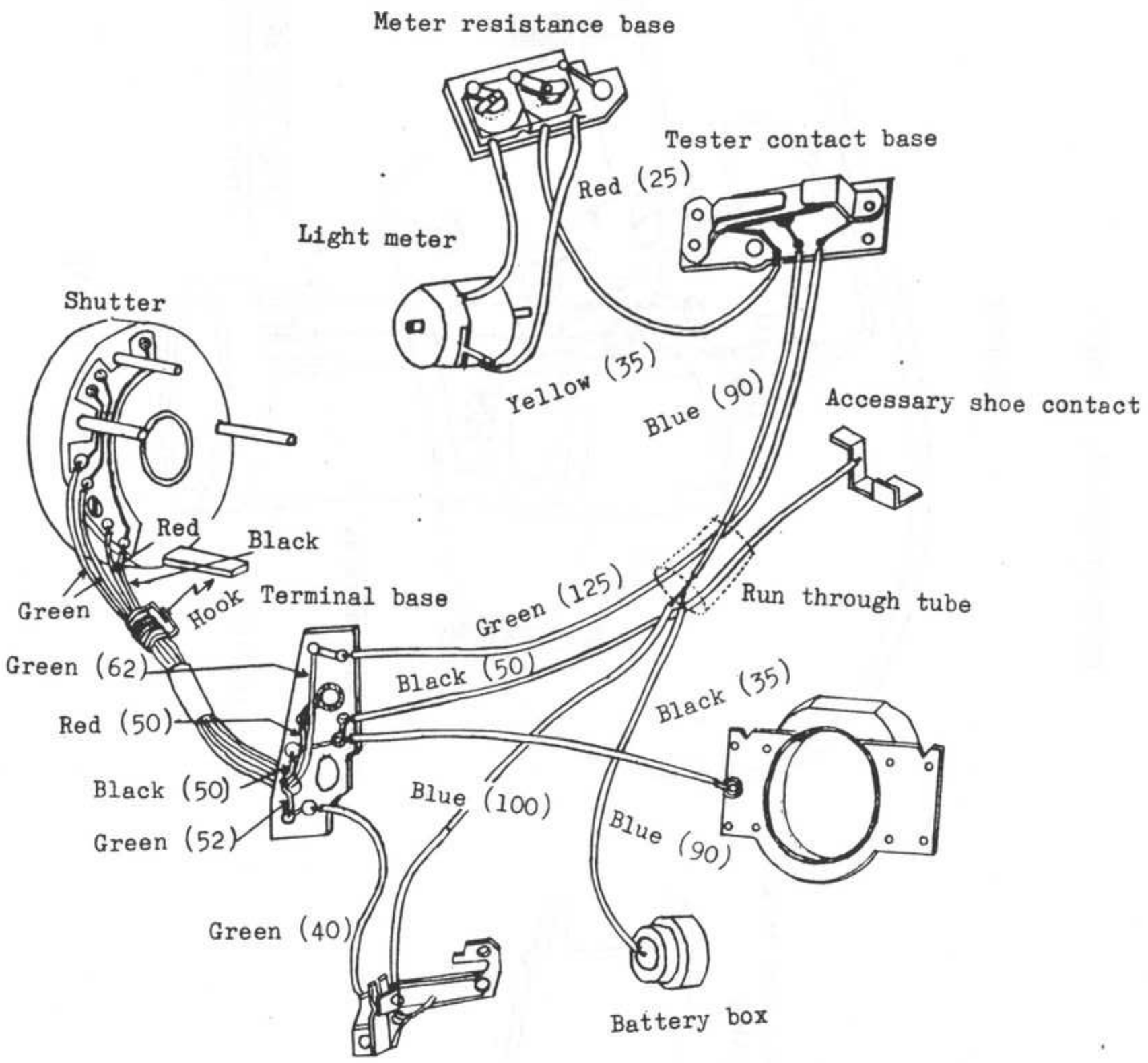
TROUBLE	CAUSE	REPAIR
RANGE-FINDER		
Needle sticks or does not come back.	1. The extreme point of Focusing needle lever spring (53) touches Focusing needle lever (58).	Cut the extreme point of Focusing needle lever spring (53) or bend the hook of Focusing needle lever (58). When cutting the extreme point of the above spring, be careful that it will not come off and stay within the operative range of Focusing needle lever (58). When bending the hook of the above lever, be sure to re-adjust the movement of Focusing needle lever (58) based upon 8-3 of SECTION II.
	2. The hook of Focusing needle lever (58) rubbs Gear plate (104).	Mend the rubbing part of Focusing needle lever (58) with pointed pincers.
	3. Focusing needle lever (58) does not move well.	Mend the movement.
	4. Needle touches Meter needle.	Bend the meter needle toward the lens.
	5. Focusing bar (249) is not fixed tight.	Hold the play within 0.1 mm.
	6. Cam follower (56) does not move well.	Mend the movement.
Needle is off ∞ position or does not move to the nearest distance.	1. Focusing needle lever (58) is deformed or the bend of needle is not adequate.	Referring to 8-3 of SECTION II, make re-adjustment or mend the bend of needle.
	2. Distance scale stopper (236) is not fixed tight.	Focus at ∞ and re-adjust.
The frame of Bright frame mask is bent.	1. Large negative lens (66) is off.	Fix it to View-finder base (52).
	2. Pressure of Half mirror hold (64) is weak.	Mend the bend of Half mirror hold (64).
EXPOSURE METER		
Meter needle does not work.	1. Circuit is disconnected or bad contact or short-circuit.	Referring to Wiring Diagram, check following for repair. a). Earth of the battery compartment is not perfect. b). Leading wire of the battery contact is not well soldered. c). Contact of power source switch is bad.

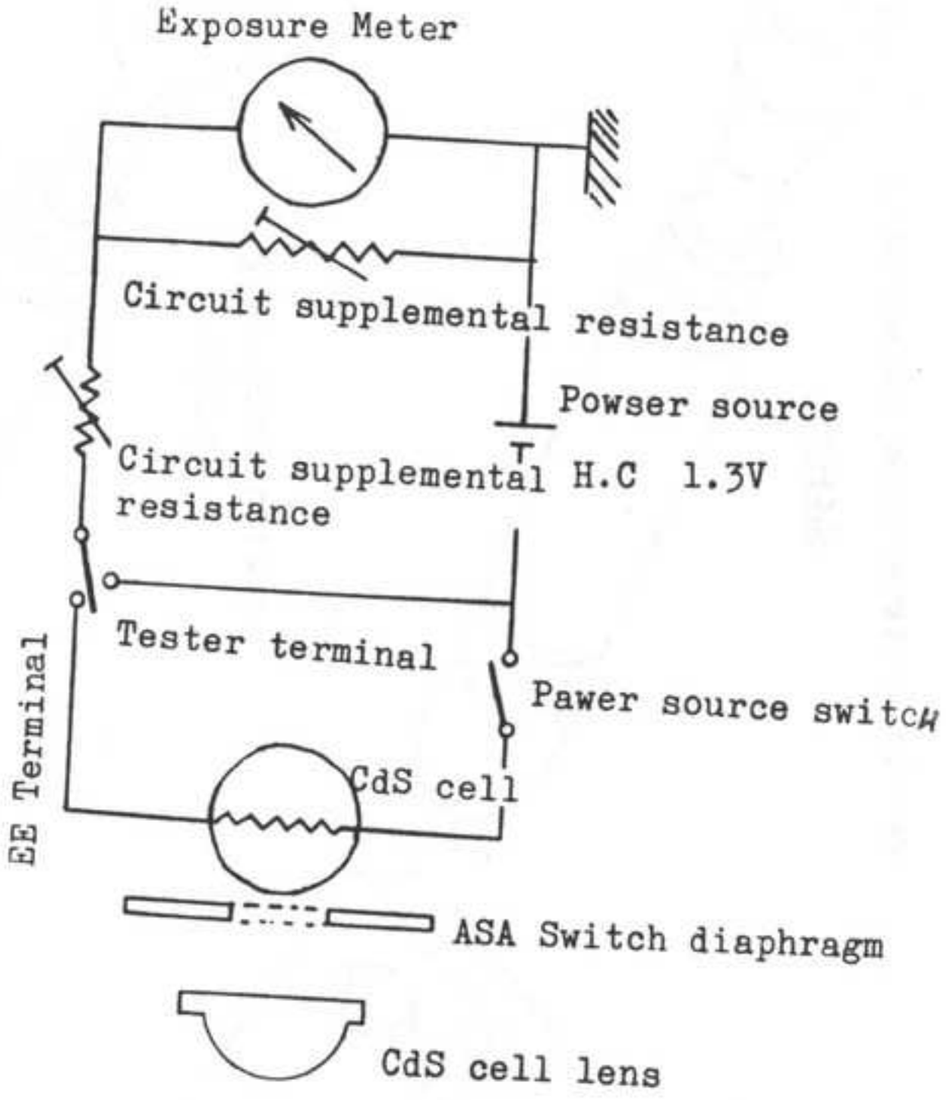
TROUBLE	CAUSE	REPAIR
		d). Terminal base is not well soldered or short-circuited. e). Battery tester contact base has poor contact or is short-circuited. f). Meter resistance base is not well soldered. g). CdS wiring is disconnected, has poor contact or CdS body is short-circuited. h). Green wire inside shutter leading wire earths. i). Battery is weak. j). Battery compartment cover (165) is not screwed up tight enough. k). Others
	2. Inside wire of Exposure meter (130) is discon-tinued.	Replace Exposure meter (130).
	3. Meter needle touches meter case or finder.	Adjust the position of meter needle.
L. V. is wrong. (including wrong zero position of meter)	1. Mal-adjustment	Make re-adjustment.
	2. Contact of Meter resistance assembly (96) is poor.	Replace it.
	3. Engagement of gear on the side of Gear plate.(104) is not proper.	Referring to 6-2 of SECTION II, check gear engagement.
	4. Caulk of the gear on the side of Meter setting plate (133) is loose.	Mend the caulk or replace Meter setting plate (133).
	5. Meter gear "A" nut is loose.	Adjust the fixing position of Exposure meter (130).
Meter needle does not move when battery check button is pressed. (But needle moves when exposed to light.)	Contact of Tester connector base (101) is poor or circuit is disconnected.	Clean contact or check circuit referring to Wiring Diagram.
Meter needle is jumpy.	1. Conductance of Exposure meter (130) is not perfect.	Replace Exposure Meter (130).
	2. Battery compartment or battery has poor contact.	Re-check.

TROUBLE	CAUSE	REPAIR
	3. Battery contact base (169) or Tester connector base (101) has poor contact	Clean each contact and adjust contact pressure.
	4. Rotary switch base (262) has poor contact.	Clean contact and adjust contact position or contact pressure.
Meter needle hooks.	1. There is foreign matter inside Exposure meter (130).	Clean it.
	2. Meter needle touches meter case or finder.	Adjust meter position.
	3. Pivot of Exposure meter (130) is too tight.	Adjust pivot or replace Exposure meter (130).
Meter needle sticks.	1. Insulator of Meter needle stopper (137) is dirty.	Clean insulator with benzine.
	2. Pivot of Exposure meter (130) is dirty.	Replace Exposure meter (130).
Rotation of Exposure meter is wrong.	1. Leading wire of Exposure meter (130) touches Gear plate (104), View-finder base (52) or Top cover (1).	Adjust the location of leading wire.
	2. Gear base (104) is not properly engaged with each coupled gear.	Check engagement of each coupled gear.
SHUTTER		
Shutter blades do not open.	1. Shutter blade lever "B" (281) does not work well.	Adjust the movement of Shutter blade lever "B" (281)
	2. Movement by means of arm of Shutter set lever (288) is not sufficient	Adjust the arm of Shutter set lever (288) or replace it (Refer to 10-5 of SECTION II).
	3. Movement of Winding rack gear is not sufficient.	Check fixing of Winding gear plate (184) or replace Winding gear plate (184) or Shutter set gear plate (176).
Shutter cannot be set.	1. Shutter set lever (288) is bent.	Mend the bend.
	2. Shutter release lever "C" (286) does not work well.	Mend the movement.
	3. Movement of Winding rack gear is not sufficient.	Check fixing of Winding gear plate (184) or replace Winding gear plate (184) or Shutter set gear plate (176).

TROUBLE	CAUSE	REPAIR
Shutter is released when depressed at B.	1. Bulb lever on the side of Mount base (270) does not work well.	Mend the movement of bulb lever.
	2. Switching between Bulb lever and Shutter release lever "B" (284) is bad.	Noting the following, bend each contact part of Bulb lever and Shutter release lever "B" (284). When speed dial on the side of Top cover (1) is set at B and released, release lever should touch the front of bulb lever and should not enter inside.
Shutter is held open after B is actuated.	1. Contact angle between Bulb lever and Shutter release lever "B" (284) is not proper.	Noting the following, bend contact part of bulb lever. Contact angle between Bulb lever and Shutter release lever "B" (284) should be such that they can return immediately when shutter is released.
	2. Star-shaped gear (295) bites Ankle base (297) too deep.	Referring to 10-3 of SECTION II, adjust engagement between Star-shaped gear (295) and Ankle base (297).

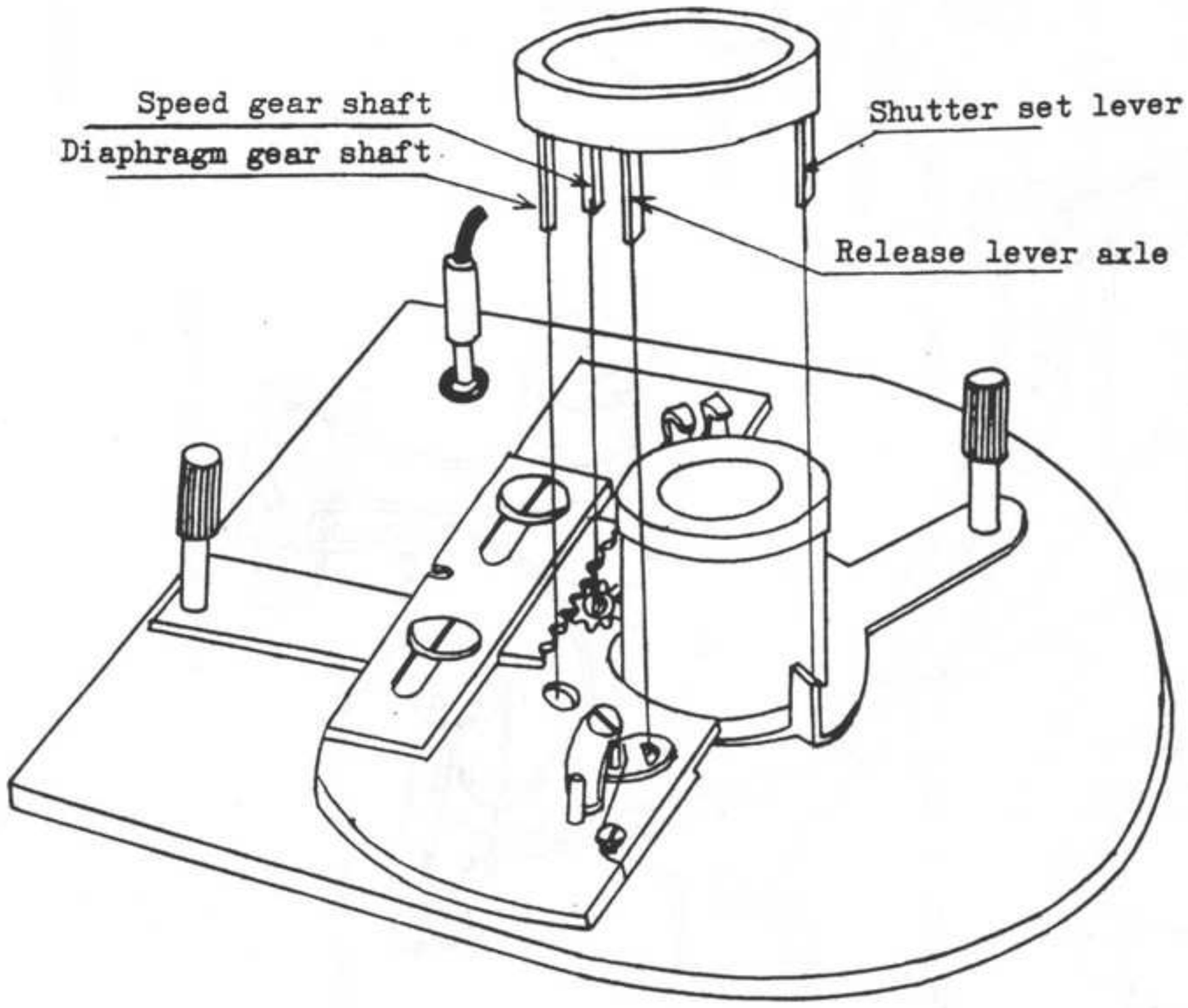
WIRING DIAGRAM



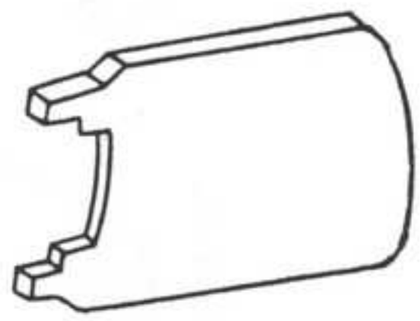


METER CIRCUIT DIAGRAM

Shutter release tool

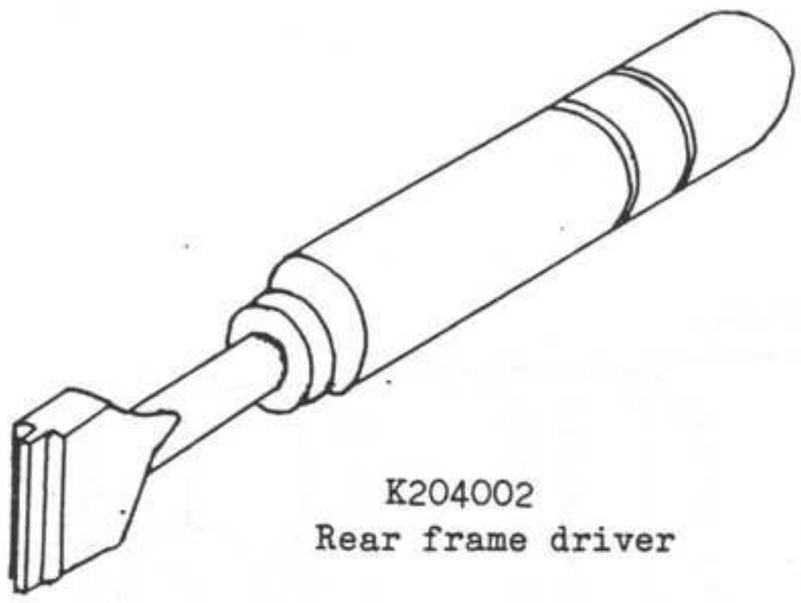


K304013

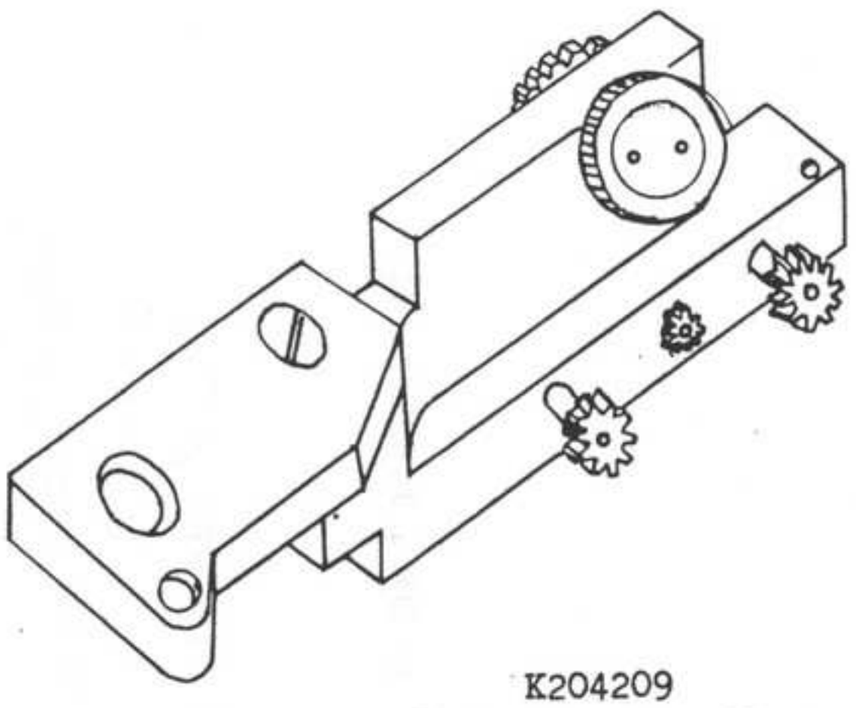


304905
Front lens retainer driver

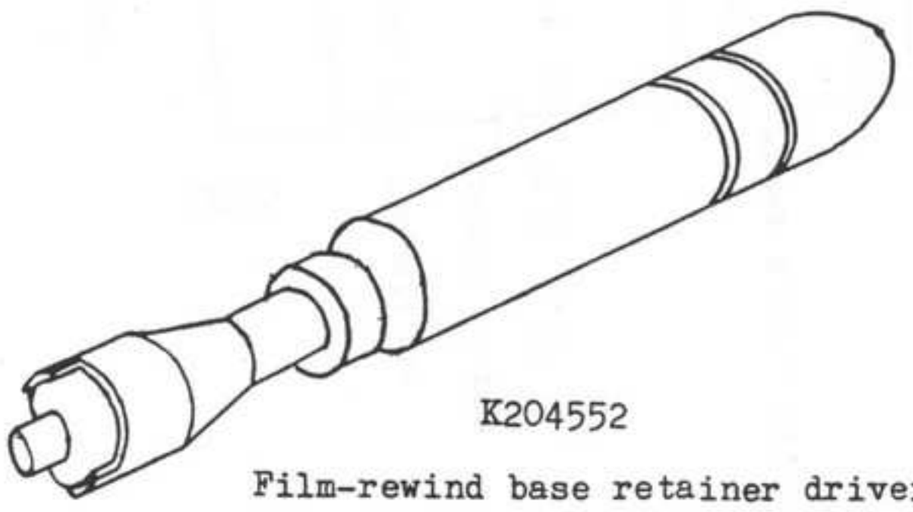
TABLE OF PARTICULAR TOOLS



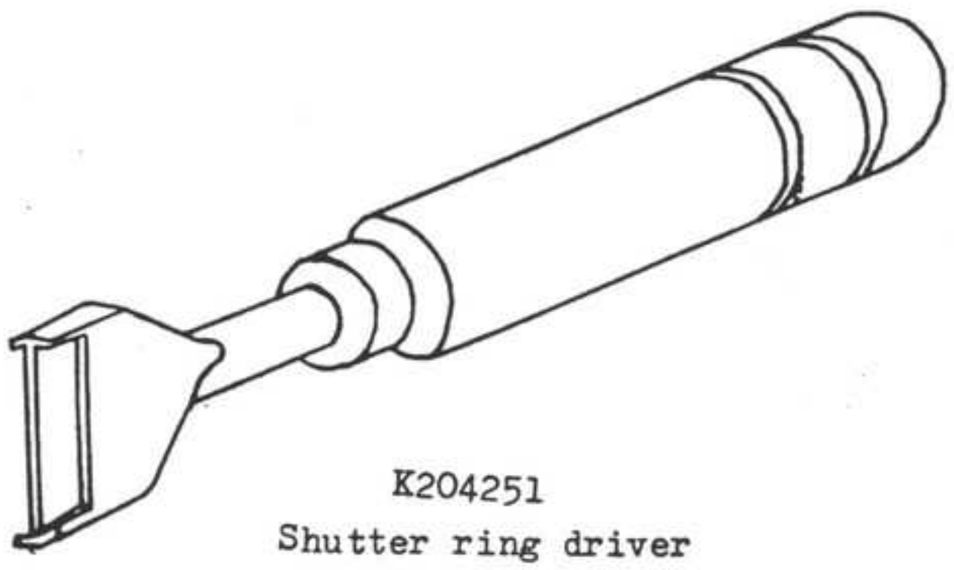
K204002
Rear frame driver



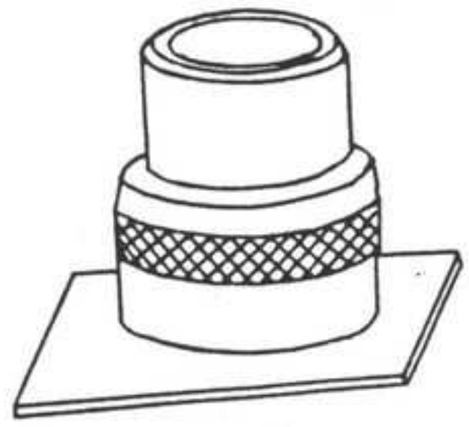
K204209
Imitative Gear Plate



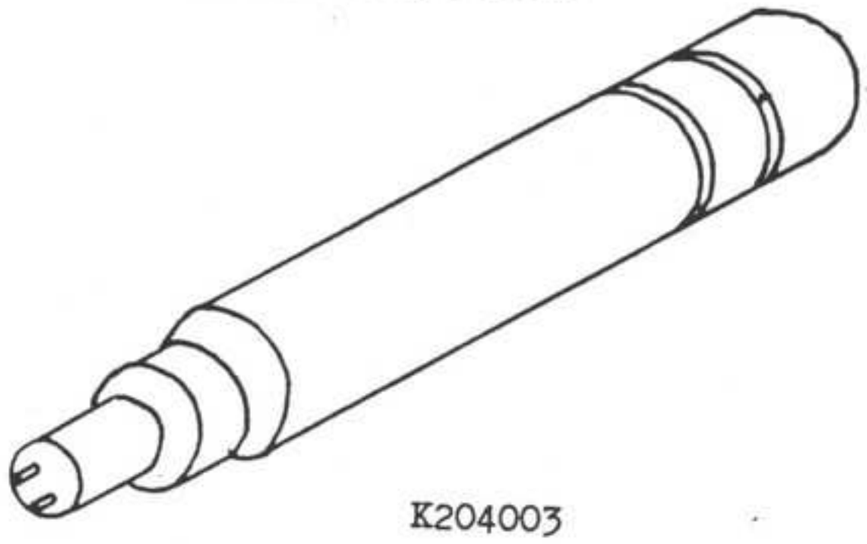
K204552
Film-rewind base retainer driver



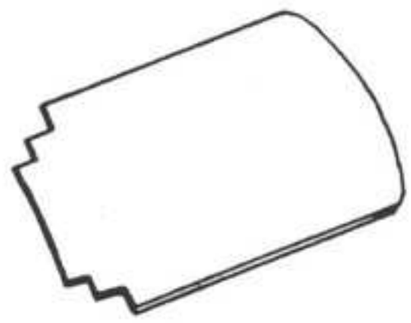
K204251
Shutter ring driver



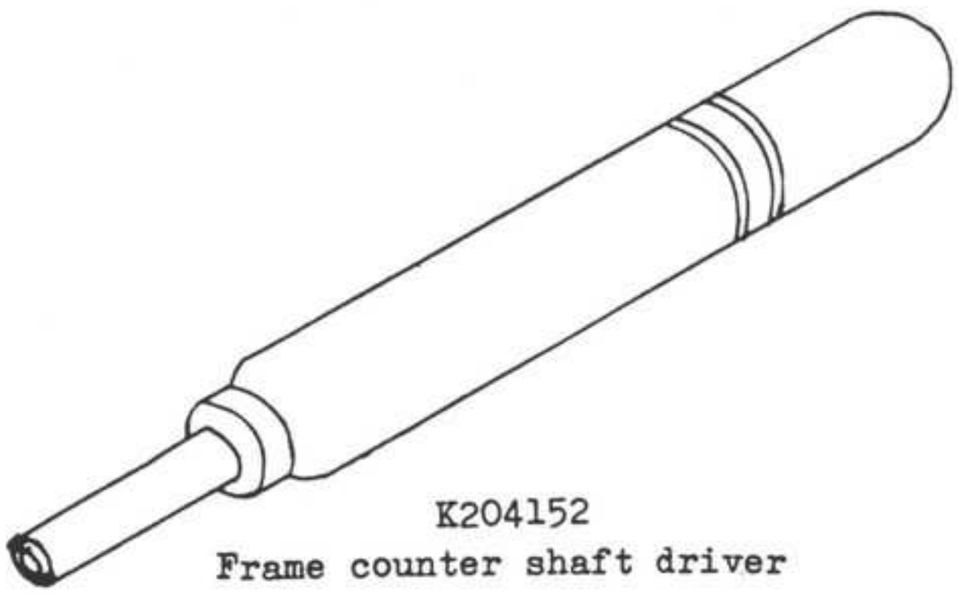
K204010
Magnifying glass



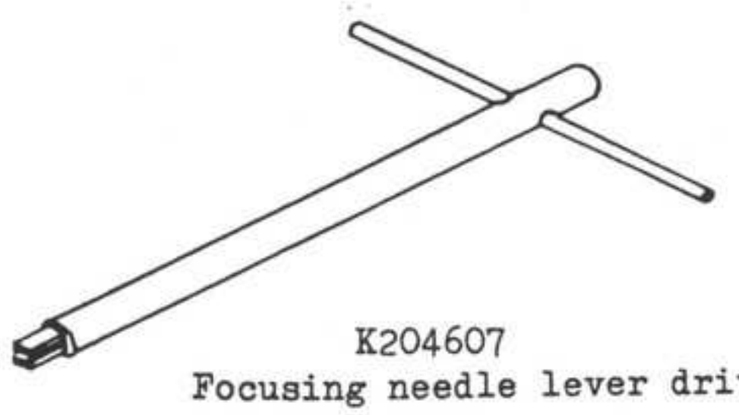
K204003
Focusing wheel screw driver



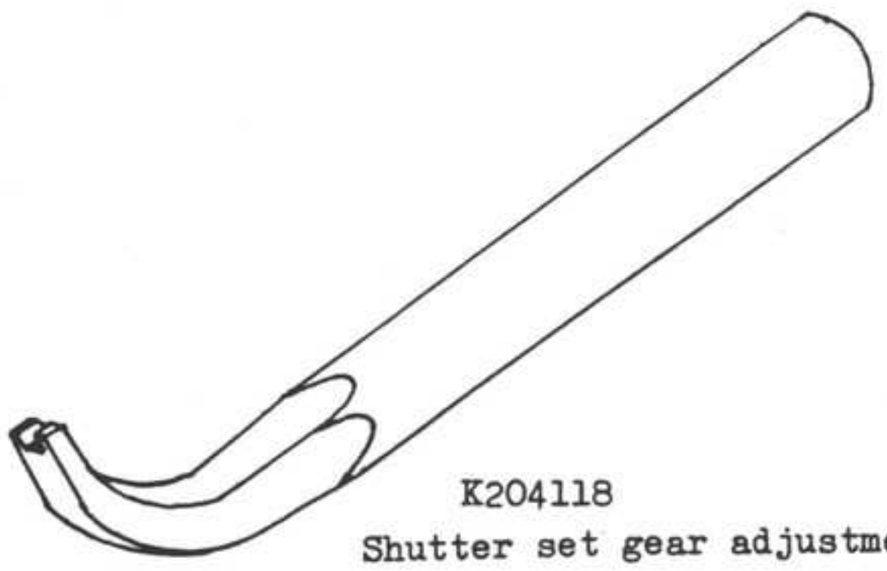
K204252
ASA Scale ring retainer driver



K204152
Frame counter shaft driver



K204607
Focusing needle lever driver



K204118
Shutter set gear adjustment tool A